

A Nationwide Survey of Conservation Banks

Final

Prepared for:

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December 19, 2003
SC10381

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Attachment — Catalog of Conservation Banks

Preface

This report presents a catalog of conservation banks, which are used to mitigate the impacts of habitat modification or habitat loss on threatened and endangered species. The catalog presents information on 22 conservation banks, and provides detailed information on the credit transaction histories of 4 banks. This report is divided into four sections. Section 1 provides some background information on conservation banks, to provide a context for the catalog; Section 2 describes the methods we used to identify and survey banks; Section 3 summarizes results from the catalog of information developed for 22 banks; Section 4 presents the additional credit transaction data developed for 4 banks. The catalog of information for 22 banks is presented in an attachment to the report.

This report was prepared in fulfillment of Contract No. GS10F02299K, issued by the Northwest Fisheries Science Center to Stratus Consulting.

1. Introduction

A conservation bank is a parcel of habitat that is managed for the protection of sensitive species and used to offset impacts to these species occurring on nonbank lands. Federally certified conservation banks are designed to protect federally listed threatened or endangered species. Conservation banks also may be established when state or local ordinances require mitigation for impacts to sensitive habitats or species that may not be federally listed. The protection of species in conservation banks generates conservation “credits” that can be used to mitigate species impacts, or “debits.”

Conservation banking transferred the concept of wetland mitigation banking into the area of conservation of threatened and endangered species. Officially, wetland mitigation banking focuses on creating, restoring, or enhancing the function and value of wetlands. Establishing wetland mitigation banks allowed larger wetland areas to be restored and simplified the mitigation process for developers. Without mitigation banks, developers needed to mitigate wetland projects case by case, often creating small, isolated wetlands with little long-term habitat value. In contrast to wetland banks, conservation banks usually focus on preserving large areas of existing habitat with long-term value for a specific species, which can effectively mitigate the loss of isolated or fragmented habitat areas (U.S. Fish and Wildlife Service, 2003).

In practice, however, developers of conservation banks can use a variety of strategies to enhance threatened and endangered species, including preserving existing habitat, restoring habitat function in degraded areas, and creating habitat. Banks also can be a hybrid of a mitigation and conservation bank — offering wetland mitigation credits and individual species credits.

Conservation banks have attracted the interest of public agencies, private individuals, and environmental nonprofit organizations because of the possibility that banks can offer a “win-win” solution for tackling issues related to endangered species and development. From a biological point of view, conservation banks can provide large areas of contiguous habitat, which may be critical to species survival. Small, isolated populations of endangered species are vulnerable to demographic and environmental stochasticity. The survival probability of a population depends on birth rate and population size; small populations with low birth rates are especially vulnerable to extinction (Dushoff, 2000). In contrast, larger populations in bigger habitat areas are considered to be more resilient to chance events. Conservation banking agreements also require ongoing habitat management and maintenance, which can be important for species survival. In addition, certain types of habitat management, such as controlled burns, are feasible only in larger habitat areas. At the same time, conservation banks cannot guarantee long-term species survival. Several large banks in Southern California were completely consumed by fire in 2003 (Leslie Beck, The Environmental Trust, personal communication, December 3, 2003). Concentrating species in one area also can make individuals susceptible to disease.

In our review of conservation banking agreements, we found that many agreements did not specify what would happen if the bank were damaged by a natural catastrophe. Management endowment funds appear to be targeted at routine management needs, and are not seen as contingency funds for catastrophic events. We did not find any examples of agreements that specifically required insurance policies to insure against catastrophic events. At the East Plum Creek Conservation Bank in Colorado, established to benefit the Preble’s meadow jumping mouse (PMJM), the conservation banking agreement specified that “in the event of damages to the Conservation Bank caused by a natural catastrophe such as a major flood, prolonged drought, disease, or regional pest infestation, CDOT [Colorado Department of Transportation], FHWA [Colorado Division of the Federal Highway Administration], and the USFWS shall confer in a timely manner to determine what actions, if any, should be taken to protect the PMJM. During such time, Conservation Credits still available in the Bank shall be withheld from use.”

Another important biological issue to consider is whether conservation banks end up providing a net benefit for endangered species. When the land used for a conservation bank is not in immediate danger of development, the credits provided by the bank essentially result in a net loss of endangered species habitat. In other words, the incidental take of endangered species (usually through habitat destruction or modification) is authorized contingent upon the purchase of conservation credits, but the bank is not actually providing any new or additional habitat beyond

what already existed in the area. The bank would, however, guarantee protection of that habitat in perpetuity. Banks that restore habitat or actively manage habitat types that would otherwise be lost through neglect (for example, long-leaf pine ecosystems require regular fire) more clearly provide a near-term benefit to endangered species that most likely equals or exceeds the loss from an incidental take.

From an economics and policy point of view, conservation banks offer the opportunity to reduce the cost of undertaking mitigation and streamline the development permitting process. In areas where development projects have been halted for years while acceptable endangered species mitigation projects are developed and approved, conservation banks provide a streamlined method for developers to meet mitigation requirements by simply writing a check. Landowners who are prevented from developing their land because of the presence of endangered species appreciate the opportunity to realize an economic gain from property where uses would otherwise have been restricted.

In addition, conservation banks offer the possibility of reducing the overall cost to undertake mitigation through increasing efficiencies for mitigation projects and economies of scale. There are two major fixed costs in developing mitigation projects: permitting and equipment mobilization. Additionally, there may be decreasing average costs associated with land acquisition. Individual mitigation projects each face permit and equipment costs, that a larger conservation banking project can allocate to reduce average total costs. This may reduce the amount that individuals would need to pay into a bank relative to the cost of undertaking the mitigation project on their own. Additionally, land acquisition, often a large cost component of mitigation projects, often exhibit decreasing average costs over a large range of parcel sizes. These economies of scale can be captured by a larger bank, and passed on to future bank users, again reducing the costs that an individual bank user would face. Thus, the per-acre cost of habitat preservation or mitigation for endangered species impacts is likely to be greater when projects are mitigated case by case compared to a conservation bank where multiple projects can receive mitigation credits in a single location. Therefore, more habitat is likely to be created or protected when banking is used as the instrument for protection compared to when individual developers or agencies mitigate for each project individually. In our interviews with bank managers, several agencies noted that the high cost of “piecemeal” mitigation had motivated their interest in developing a conservation bank.

Conservation banking offers the possibility of moving endangered species protection from a strictly regulatory realm into the arena of markets. Conservation bank owners can adjust the price of conservation credits to reflect market conditions — discounting credits where demand is low and increasing the price when demand is high and the supply of credits is limited. The banking market, however, is a highly regulated market. The ability to provide credits and the determination of species debits is regulated by the U.S. Fish and Wildlife Service (USFWS) or the appropriate state or local agency. The market size for credits is restricted to the service area

of the bank — banks with a small service area may find little demand for credits within the area. Banks also are subject to shifting regulatory conditions. For example, in areas that adopted fee-based mitigation schemes, parties needing to mitigate for incidental takes of endangered species can pay a fee to the county or agency that has received approval for fee-based mitigation (usually based on approval of a multispecies habitat conservation plan). Fee-based mitigation can therefore eliminate the demand for purchasing credits at a private conservation bank.

1.1 History of Conservation Banks

Carlsbad Highlands, the first conservation bank in the United States, was dedicated in April 1995 in San Diego County, California (Anonymous, 1995). That same month, the State of California issued an official policy on conservation banks that provided formal guidance on using conservation banks to accomplish resource management goals (Wheeler and Strock, 1995). This policy established a set of precepts to guide the development of conservation banks, including the need for permanent protection of all land in the bank after sale of the first credit, approval by a regulatory agency, approval of a resource management plan and guarantees of funding for operation and maintenance, provision for long-term management of the bank after credits have been awarded, assessment of bank credits with reference to baseline conditions at the site, and the need to award bank credits case by case negotiated between the project proponent, bank manager, and regulatory agency (Wheeler and Strock, 1995).

The initial incentive for conservation banking in California was to help implement the state's Natural Community Conservation Planning (NCCP) Program, which was first developed to help protect coastal sage scrub habitat for the threatened California gnatcatcher and other species. The goal of the NCCP process is to identify and conserve threatened habitat at the ecosystem scale, to help avoid conflicts between economic growth and development and habitat preservation (Anonymous, 1995; Environmental Defense, 1999). Under the NCCP, conservation banks were envisioned as a tool for providing long-term protection of habitat and offering landowners economic incentives for habitat protection by being able to sell mitigation credits. In California, mitigation requirements result from the California Environmental Quality Act (CEQA), which requires mitigation if a proposed activity will "substantially diminish habitat for fish, wildlife, or plants," and from requirements of state and federal endangered species acts.

In 1996, the California Department of Fish and Game and the U.S. Fish and Wildlife Service jointly issued a "Supplemental Policy Regarding Conservation Banks Within the NCCP Area of Southern California." This policy reaffirmed the support of the agencies for the creation of conservation banks, and specifically noted that the "the number of conservation banks that are established will be regulated by the 'free market' . . . not by the wildlife agencies." The policy also notes that "[o]nly in-kind mitigation (same habitat and species) will be permitted unless . . . the wildlife agencies determine that the bank achieves regional conservation goals" (U.S. Fish &

Wildlife Service and California Department of Fish and Game, 1996). By 1999, more than 20 conservation banks had been developed in California (Environmental Defense, 1999).

For this report, we identified conservation banks that were focused specifically on species protection. Although many of these banks also sell habitat or wetland credits, we only included the banks that focused on species-specific protection as well as on habitat or wetland protection. We excluded “wetland only” banks, which are more appropriately categorized as “wetland mitigation” banks instead of conservation banks. We were able to identify 48 active conservation banks that met our criteria and 4 banks that are in development. The active banks are located in eight states and the island of Saipan (see Section 2.2).

Ironically, although the NCCP program was the original impetus for establishing conservation banking in California, some of the new plans produced under the NCCP do not include conservation banking as part of a regional conservation strategy. For example, the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP), which was approved by the Riverside County Board of Supervisors on June 17, 2003, provides for a regional approach for assembling the required conservation area, relying on protection of federal, state, local, and private lands. An applicant wanting to develop property outside of the protected conservation area will receive an incidental take authorization through payment of a mitigation fee or “in-lieu payment” to the relevant city or county. These fees are used to support conservation, but not to purchase credits in a private conservation bank. The MSHCP specifically notes that “because of the . . . fee-based mitigation program, it is not anticipated that any new conservation banks or mitigation areas will be established.” Existing conservation banks are “grandfathered” into the plan by allowing the “in-lieu payment” requirement to be met through acquiring acreage in a conservation bank, with a 1:1 ratio for area of project impact and area of acquired land (Dudek & Associates, 2003).

In other areas of the country, however, interest in conservation banks is growing and new banks are under development. For example, in Oregon, the USFWS is working with the Oregon Department of Transportation to pursue the development of a conservation bank for an endangered fish (Oregon chub) that occurs on Department of Transportation lands (Rollie White, Aquatic Endangered Species Division Manager — Oregon Fish and Wildlife Office, e-mail communication, September 16, 2003). In Alabama, the Department of Transportation is working to set up a new bank for gopher tortoises with 600 acres of mitigation credits that would be used internally for Department of Transportation projects (Bruce Porter, USFWS Daphne Field Office, personal communication, October 10, 2003). In Florida, the interest in conservation banking is high, but legal statutes have not yet been developed that authorize the creation and use of banks (Lynn Zenczak, Earthmark Companies, personal communication, September 9, 2003).

1.2 Legal Status of Conservation Banks

Conservation banks approved by the USFWS for mitigation of impacts to endangered species are usually authorized through a formal conservation bank agreement between the bank owner, the USFWS, and possibly a related state agency. The conservation bank agreement specifies the number of conservation credits established for use in the bank, the number of acres or individuals of a species that pertain to each credit, restrictions on land use of the bank, procedures for sales and transfers of conservation credits, requirements for monitoring and annual reports, and provisions for default among any of the parties. Agreements may also include clauses such as a “no discrimination” clause that prohibits the USFWS from establishing more onerous mitigation requirements if a party chooses to purchase conservation credits from the conservation bank versus conducting other types of off-site mitigation (e.g., U.S. Fish and Wildlife Service et al., 1997). Agreements may also specify required land management activities to be undertaken by the bank owner.

Conservation credits in a conservation bank are usually linked to an approved habitat conservation plan for the bank. A habitat conservation plan describes the measures to be undertaken that will mitigate for “incidental takes” of species protected by the federal Endangered Species Act. An “incidental take” is defined as a take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (Endangered Species Act Amendments of 1982; P.L. 97-304, Oct. 13, 1982, 96 Stat. 1426). A conservation bank may receive authorization for a “Master Permit,” which allows the approved habitat conservation plan to mitigate for incidental takes by third parties (e.g., U.S. Fish and Wildlife Service et al., 1997). When a third party applies for an “Incidental Take” permit under Section 10 of the federal Endangered Species Act, the USFWS may authorize an applicant to fulfill off-site mitigation requirements through purchasing a certain number of conservation credits at an approved conservation bank. The USFWS will often provide a list of a suitable bank or banks that an applicant can use in areas served by conservation banks.

1.3 Location of Banks across the United States

The presence of conservation banks varies greatly across the United States, primarily reflecting different priorities of each of the regions of the USFWS. Figure 1 is a map of USFWS regions, with information on conservation banking activities in each of the regions.

Region 1 — The greatest number of active conservation banks are in California. The CEQA was identified as a significant motivation for the development of conservation banks (R. White, U.S. Fish and Wildlife Service, Aquatic Endangered Species Division Manager for Region 1 — Oregon, personal communication, September 16, 2003). We identified 34 active banks in California, but it is possible that there are other banks. We also identified two banks in

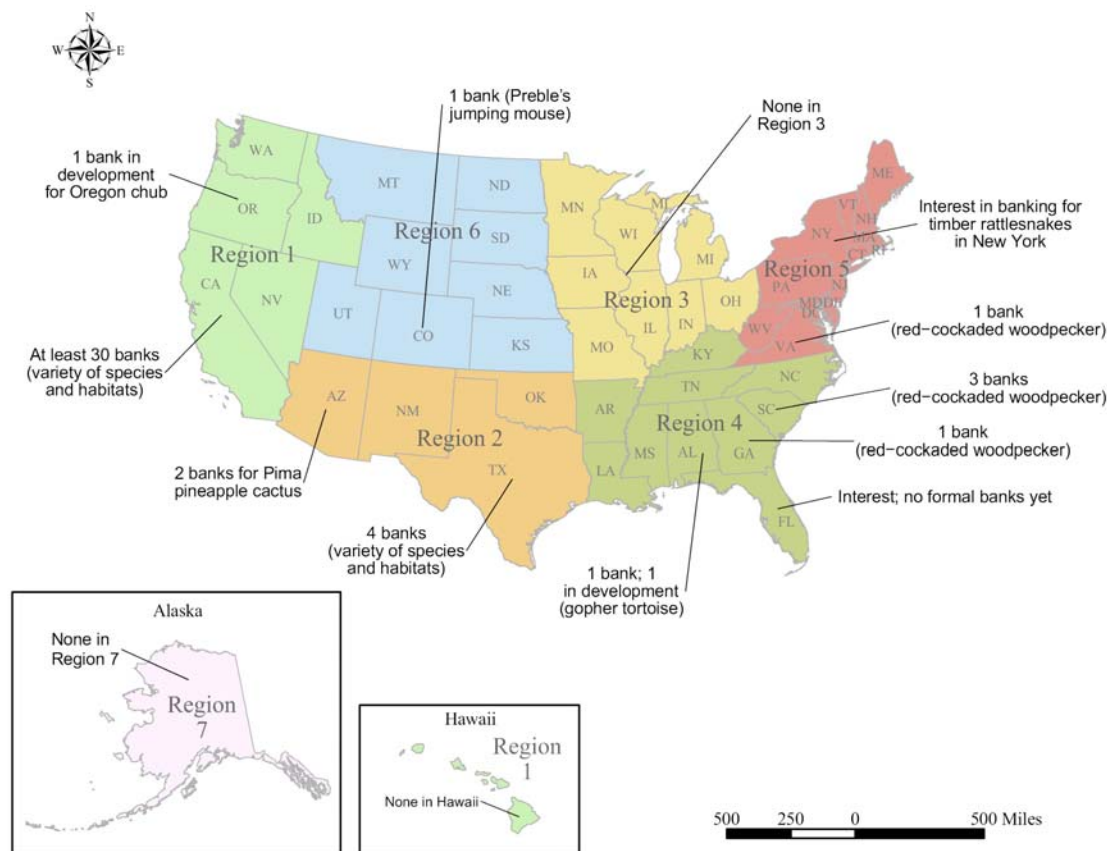


Figure 1. Map of conservation bank activity across the United States.

California that were developed, but the agreements fell through before completion. There are no active conservation banks outside of California in Region 1, according to Larry Salata, Endangered Species Program Region 1 (personal communication, September 15, 2003). The absence of banks outside of California was attributed to a combination of extensive protection for listed species, intervention to preserve listed species when the species are identified, limited population pressures in some areas, and large federal land holdings. In Oregon, an effort is under way with the Oregon Department of Transportation to establish a conservation bank to address the Oregon chub (R. White, U.S. Fish and Wildlife Service, Aquatic Endangered Species Division Manager for Region 1 — Oregon, personal communication, September 16, 2003).

Region 2 — There are four active conservation banks in Texas (Hickory Pass, Brushy Creek, Williamson County Karst, and Balcones) and two banks in Arizona for the Pima pineapple cactus (Swan Road and Palo Alto Ranch). The USFWS expects that conservation banks would eventually be developed in New Mexico and Oklahoma as urban growth and development

pressures increase in those areas (Leslie Dierauf, Region 2 active chief overseeing threatened and endangered species, personal communication, September 16, 2003).

Region 3 — There are no active conservation banks in this region, according to T.J. Miller, Supervisor of Endangered Species Consultation for Region 3. The absence of banks was attributed to hesitation about the concept of conservation banks at the field station level. Also, no conservation banking proposals have been received for review (T.J. Miller, personal communication, September 10, 2003).

Region 4 — The active conservation banks in Region 4 consist of three red-cockaded woodpecker banks in South Carolina and one in Georgia, and one gopher tortoise bank in Mobile, Alabama. An additional gopher tortoise bank is under development in Alabama with the Alabama Department of Transportation. In Florida, conservation banks have not yet been formally approved, but private investors have purchased land with the intention of offering mitigation credits (David Dell, Regional Habitat Conservation Plan Coordinator, personal communication, September 16, 2003).

Region 5 — Piney Grove Preserve in Virginia has sold one credit for red-cockaded woodpeckers. Otherwise, there are no active conservation banks in this region, according to Diane Lynch, regional permits coordinator for Region 5 in the Division of Endangered Species (personal communication, September 10, 2003). EarthMark Companies, which has experience developing wetland mitigation banks, is working on a potential conservation bank location for timber rattlesnakes in upstate New York.

Region 6 — The Preble's jumping mouse bank in Colorado is the only active conservation bank in this region. The absence of additional banks was attributed to a small number of listed species on nonfederal lands. Urban growth and development may result in additional banks in the future (Jill Parker, Chief of Endangered Species for Region 6, personal communication, September 11, 2003).

Region 7 — There are no conservation banks operating in Alaska, according to Steve Klosiewski (Region 7 Endangered Species program, personal communication, September 15, 2003). The absence of conservation banks was attributed to extensive federal holdings, minimal development pressure, and the opportunity to avoid locations with endangered species when development issues arise.

Across the different USFWS regions, the trend seems to be toward increasing interest in conservation banking where development pressures are mounting. In California, the most active area for conservation banking, there is decreasing interest in conservation banking where regional habitat conservation plans are moving toward "in-lieu fee payments" for mitigation and increasing interest in other areas.

2. Methods

2.1 Identifying Banks

We initiated the project by compiling a list of all conservation banks that we could identify (Table 1). We included banks in the initial list only if they either targeted individual species or were designed to conserve upland habitats that included sensitive species. Banks designed specifically for wetland mitigation or preservation credits were excluded from the list. Forty-eight active banks and four “in development” banks were identified through 1) internet searches, including the catalog of conservation and mitigation banks that was developed by the California Department of Fish and Game (<http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/catalogue.shtml>); 2) telephone calls to relevant personnel in each of the regional USFWS offices to inquire if banks are present in that region; and 3) a search of relevant information databases. Databases searched were Dialog News Room, a database that indexes more than 7,000 publications, including trade journals, scholarly publications, consumer press, newspapers, newsletters, broadcast transcripts, and more; Dialog’s “Papers” Category, which indexes over 50 major newspapers from across the United States; NTIS (National Technical Information Service), which indexes government reports; and Biosis, Agricola, Social SciSearch, SciSearch, and Gale Group Magazine Index, which all index technical or scholarly literature. Search terms used were “conservation bank” (and variates — banks, banking, etc.) and the term “mitigation banking” combined with “threatened or endangered species.”

Out of the 48 banks identified, we selected 22 banks for inclusion in the catalog. Banks were selected for inclusion if they had evidence of previous credit transactions and a clear focus on species conservation. We also tried to represent different species, habitat types, and geographic areas.

We tried to obtain credit transaction data on each of the banks in the catalog, but found that most of the bank owners were not willing to provide transaction data because of privacy concerns. Specifically, private bank developers and owners did not want future clients to know the price of previous transactions, especially if the price of credits had increased over time. We were able to obtain transaction data for two banks that have maintained fixed pricing for credits over time: Kern Water Bank and Mobile County Gopher Tortoise Conservation Bank. We also obtained credit transaction data, without pricing information, for two banks: Sedco Hills and Springtown Reserve.

Table 1. Summary of identified conservation banks

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Included in catalog							
Agua Fria Multi-Species Mitigation Bank	CA	Merced	3,234 acres	San Joaquin kit fox, burrowing owl	Brian Boroski 559 449 1423	http://sacramento.fws.gov/es/bank_list.htm	
Balcones Canyonlands Preserve	TX	Austin	26,323 acres goal of 30,428	Golden-cheeked warbler, black-capped vireo, Tooth Cave pseudoscorpion, Tooth Cave Spider, Tooth Cave ground beetle, Kretschmarr Cave mold beetle, Bone Cave harvestman	Kevin Connally 512 854 9437	http://www.ci.austin.tx.us/preserves/bcp.htm	http://www.co.travis.tx.us/tnr/bccp/default.asp
Chiquita Canyon Conservation Bank	CA	Orange	327 acres (1 acre = 1 credit)	California gnatcatcher	Valerie McFall 949 754 3400 ext. 475	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/orange.shtml	
Coles Levee Ecosystem Preserve	CA	Kern	6,059 acres (1 acre = 1 credit)	San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, blunt-nosed leopard lizard, Swainson's hawk	Wes Rhodehamel 661 835 8300 ext. 105	http://www.dfg.ca.gov/cpb/conplan/mitbank/catalogue/kern.shtml	http://sacramento.fws.gov/es/bank_list.htm
East Plum Creek Conservation Bank	CO	Douglas	25 acres	Preble's meadow jumping mouse	F. Yates Opperman 303 757 9497	http://www.epa.gov/fedrgstr/EPA-SPECIES/2002/December/Day-26/e32464.htm	
Fitzgerald Ranch Conservation Bank	CA	San Joaquin	803 acres; 62 credits	Vernal pool fairy shrimp, <i>Legenere limosa</i> , California tiger salamander, western spadefoot toad	Lane Family Partnership Trust #1 (Marden Wilbur) 209 483 0030	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_joaquin.shtml	http://sacramento.fws.gov/es/bank_list.htm

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Hickory Pass Conservation Ranch	TX	Burnett	3,000 acres (500 acres in bank = 500 credits)	Golden-cheeked warbler	David Johnston 512 472 4542	http://news.fws.gov/ewsReleases/R2/BC6C6868-4DDC-4892-BC6B96EDA824DB4A.html	http://www.williamson-county.org/agenda/minutes/m050702.htm
Kern Water Bank (Conservation Bank)	CA	Kern	3,267 acres (1 acre = 1 credit)	San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, others	Cheryl Harding 661 399 8735	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/kern.shtml	http://sacramento.fws.gov/es/bank_list.htm
Kimball Island Conservation Bank	CA	Sacramento	102-109.6 acres	Delta smelt, Sacramento splittail, chinook salmon, steelhead	Kellie Berry 916 331 8810	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/sacramento.shtml	http://sacramento.fws.gov/es/bank_list.htm
Mobile County Gopher Tortoise Conservation Bank	AL	Mobile	222 acres; 125 tortoises	Gopher tortoise	Bruce Porter 251 441 5864	http://southeast.fws.gov/news/2001/r01-039.html	
Pleasanton Ridge Conservation Bank	CA	Alameda	600-654 acres	California red-legged frog, Alameda whipsnake	Nancy Wenninger 510 544 2607	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/alameda.shtml	http://sacramento.fws.gov/es/bank_list.htm
Pope Ranch Conservation Bank	CA	Yolo, Solano, Sacramento	391 acres	Giant garter snake	Kellie Berry 916 331 8810	http://sacramento.fws.gov/es/bank_list.htm	

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Red-Cockaded Woodpecker — University of South Carolina Development Foundation	SC	Georgetown	1500 acres (25-30 RCW clusters)	Red-cockaded woodpecker	C. Lamar Comalander 803 788 0590	http://www.environmentaldefense.org/article.cfm?contentid=2664	
Sedco Hills	CA	Riverside	180 acres	California gnatcatcher	Leslie Beck 619 461 8333	http://www.sdcounty.ca.gov/dplu/Resource/5~mitbanks/5~mitbnks-index.html	
Sheridan Conservation Bank	CA	Placer	623 acres	Valley elderberry longhorn beetle	Kellie Berry 916 331 8810	http://sacramento.fws.gov/es/bank_list.htm	
Southlands Forest	GA	Bainbridge	1500 acres (11 breeding clusters of red-cockaded woodpeckers)	Red-cockaded woodpecker	Craig Hedman 229 246 3642 ext. 270	http://www.environmentaldefense.org/article.cfm?contentid=2664	
Springtown Reserve	CA	Alameda	92.5 acres	California tiger salamander, burrowing owl	Terry Huffman 415 925 2000	http://www.dfg.ca.gov/cpb/conplan/mitbank/atalogue/alameda.shtml	
Stillwater Plains Mitigation Bank	CA	Shasta	834-900 acres	Valley elderberry longhorn beetle, vernal pool fairy shrimp, Orcutt's grass	Glenn Hawes 530 365 4233	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/shasta.shtml	http://sacramento.fws.gov/es/bank_list.htm

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Swan Road Conservation Bank	AZ	Pima	513 acres (1 acre = 1 credit)	Pima pineapple cactus	Linda Closs 520 740 6305	http://www.sahba.org/regaffairs10.htm	
Williamson County Karst Conservation Foundation	TX	Williamson	220 acres	Bone Cave harvestman spider, potential for Coffin Cave mold beetle, Tooth Cave ground beetle	Steve Paulson 512 347 9000	http://www.wilcokarst.org/facts.html	
Wilson Creek	CA	Riverside	1850 acres (1 acre = 1 credit)	California gnatcatcher and Quino checkerspot butterfly	Michael McCollum 916 688 2040	http://www.mccollum.com/Mitbanks.htm	
Wilson Valley	CA	Riverside	1280 acres (1 acre = 1 credit)	California gnatcatcher and Quino checkerspot butterfly	Michael McCollum 916 688 2040	http://www.mccollum.com/Mitbanks.htm	
Not included in catalog							
Arroyo Seco Conservation Bank	CA	Sacramento	240 acres	Vernal pool tadpole and fairy shrimp, Orcutt grass	Conservation Resources, LLC 916 974 3383	http://sacramento.fws.gov/es/bank_list.htm	
Barten Ranch	CA	Sacramento	1,440 acres	Vernal pool, wetlands, listed crustaceans	Angelo Tsakopoulos 916 383 2500	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/sacramento.shtml	
Brosnan Forest	SC	Not known	10 breeding clusters of red-cockaded woodpeckers	Red-cockaded woodpecker	C. Lamar Comalander 803 788 0590	http://www.millikenforestry.com/services_environmentalservices.htm	

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Brushy Creek Conservation Bank	CA	Contra Costa	120 acres	Burrowing owl	Wildlands 877 683 8810	http://www.wildlandsinc.com/banks/mit_wildbanks.htm	
Brushy Creek Forest	TX	East Texas	2,000 acres	Red-cockaded woodpecker	Champion International Corporation	Battelle, 1998	
Bryte Ranch Conservation Bank	CA	Sacramento	573 acres	Vernal pool tadpole and fairy shrimp	Charter Properties 916 489 6600	http://sacramento.fws.gov/es/bank_list.htm	
Cajon Creek	CA	San Bernardino	610 acres (1 acre = 1 credit)	Riversidian alluvial fan sage scrub, 24 associated sensitive species	Douglas W. Sprague 213 258 2777	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_bernardino.shtml	
Carlsbad Highlands	CA	San Diego	180 acres	Upland coastal sage scrub (multispecies credits)	Michael McCollum 916 688 2040	http://www.mccollum.com/Mitbanks.htm	
Chevron Lokern Conservation Bank	CA	Kern	18,000 acres (3 acres = 1 credit for permanent disturbance; 1.1 acres = 1 credit for temporary disturbance)	San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rat, and Swainson's hawk	Ron Rempel (USFWS) 916 654 9980	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/kern.shtml	
Dolan Ranch Conservation Bank	CA	Colusa	251 acres	Vernal pool preservation, giant garter snake	Dolan Ranch Conservation Bank 916 331 8810	http://sacramento.fws.gov/es/bank_list.htm	

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Four Seasons	CA	Riverside	99 acres	Not available	Not available	http://www.rcip.org/mshc/pdocs/vol1/4_6_1.pdf	
Friendfield Plantation	SC	Not specified	6 breeding clusters of red-cockaded woodpeckers	Red-cockaded woodpecker	C. Lamar Comalander 803 788 0590	http://www.millikenforestry.com/services_environmentalservices.htm	
Goldrich Conservation Bank	CA	Riverside	445 acres	Not available	Not available	http://www.rcip.org/mshc/pdocs/vol1/4_6_1.pdf	
Haera Wildlife Conservation Bank	CA	Alameda	562 acres	Burrowing owl, San Joaquin kit fox	Kellie Berry 916 331 8810	http://www.wildlandsinc.com/banks/mit_wildbanks.htm	
Laguna Creek Conservation Bank	CA	Sacramento	780 acres	Vernal pool preservation and creation, valley elderberry longhorn beetle	Laguna Creek Conservation Bank 916 974 3383	http://sacramento.fws.gov/es/bank_list.htm	
Madura Mitigation Site	CA	San Diego	35 acres (1 acre = 1 credit)	California gnatcatcher	Mark Madura 619 756 5526	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_diego.shtml#Madura	
Manchester Avenue Conservation Bank	CA	San Diego	150 acres	Coastal sage scrub/multispecies, including state and federally listed plants	Michael McCollum 916 688 2040	http://www.mccollum.com/Mitbanks.htm	
North Peak	CA	Riverside	789.27 acres	Not available	Not available	http://www.rcip.org/mshc/pdocs/vol1/4_6_1.pdf	

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Palo Alto Conservation Bank	AZ	Pima	N/A	Pima pineapple cactus	Ross Humphreys — owner 520 623 9558		
Piney Grove Preserve	VA	Sussex	2695 acres; 1 breeding cluster of red-cockaded woodpeckers	Red-cockaded woodpecker	Brian van Eerden 757 549 4690	http://nature.org/wherework/northamerica/states/virginia/preserves/art4982.html	
Poway (SANREX) Mitigation Land Bank	CA	San Diego	880 acres (1 acre = 1 credit)	California gnatcatcher	Don Hunsaker 858 573 1835	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_diego.shtml#Poway	
Rancho Jarmul Mitigation Bank	CA	San Diego	250 acres	Least Bell's vireo, freshwater wetlands, riparian habitat	Kellie Berry 916 331 8810	http://www.wildlandsinc.com/banks/mit_wildbanks.htm	
Saipan Upland Mitigation Bank	Saipan, Northern Mariana Islands		814 acres = 97 credits	Endangered birds: Micronesian megapode, nightingale reed-warblers	Arlene Pangelinan (USFWS, Region 1) 808 792 9400		
Silverado Ranch	CA	Riverside	2480 acres	Not available	Not available	http://www.rcip.org/mshcpdocs/vol1/4_6_1.pdf	
Skunk Hollow	CA	Riverside	150 acres (1 acre = 1 credit)	Fairy shrimp, Orcutt's grass	Jeff Newman (USFWS) 619 431 9440	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/riverside.shtml	

Table 1. Summary of identified conservation banks (cont.)

Conservation bank name	State	County or location	Size (acres and credits)	Species for which credits are available	Contact name and phone	Background information source #1	Background information source #2
Whelan Ranch	CA	San Diego	136 acres	Coastal sage scrub/multispecies	Jim Jackson or Michael McCollum 619 515 5653 or 916 688 2040	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_diego.shtm	http://www.mccollum.com/Mitbanks.htm
In development							
Oregon chub — Oregon DOT	OR	Not known	Not known	Oregon chub	Rollie White, USFWS Region 1 503 231 6179	Bank is still in proposal stage with ODOT and FWS	
Big Cypress Mitigation Bank	FL	Collier/Hendry	2,500 acres	Florida “priority one” panther habitat, but credits developed on a habitat basis and not on a species basis	Lynn Zenczak 239 415 6200	http://www.mitigationbank.com/endangered_species.htm	
Commencement Bay	WA	Pierce	Not known	Juvenile chinook salmon, English sole, “Hylebos birds complex”	ATOFINA Chemicals, Inc.	http://www.darcnw.noaa.gov/hylsettl.htm	
Timber Rattlesnake Bank	NY	Not known	Not known	Timber rattlesnake	Lynn Zenczak 239 415 6200		
Developed as banks, but never became active							
Lake Hodges	CA	San Diego	280 acres (1 acre = 1 credit)	California gnatcatcher	Don Hunsaker (SDSU, president of the Environmental Trust) 619 461 8333	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_diego.shtm	
Lost Hills Utility District Mitigation Bank	CA	Kern	160 acres	San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rat, Swainson’s hawk, giant kangaroo rat, San Joaquin woollythreads	Wes Rhodehamel 661 835 8300 ext. 105	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/kern.shtml	

2.2 Data Collection

We obtained information about each bank in the catalog through telephone interviews with a bank contact person. We developed a template for information gathering that was used to structure the interviews. Where necessary, interviews were followed with e-mail messages to clarify responses to questions. When available, we also reviewed the conservation banking agreement or other documents associated with a bank.

3. Catalog of banks

The catalog of bank information is presented in the attachment to this report, with banks listed in alphabetical order. Table 2 presents a summary of the size of each bank in the catalog, the number of credits used, and the price per credit. Many of the banks in the catalog include habitat credits (such as wetland creation) as well as species-specific credits. In Table 2, we listed only the number and price of credits that pertain to species-specific credits, because species credits are the focus of this report. The full range of habitat credits available at a bank is included in the catalog so that the full range of a bank's activities could be documented. We also noted the primary motivation for the bank's development: internal use, regional planning, or for profit (see Section 4.1). Not surprisingly, we found a large variation in the price of credits, ranging from \$55 per credit for karst habitat at the Balcones Canyonlands Preserve in Texas to \$100,000 for a red-cockaded woodpecker breeding pair credit at the red-cockaded woodpecker bank owned by the University of South Carolina Development Foundation. Below, we briefly review some of the results from the catalog of banks, identifying some of the common findings across sites.

We also summarized the banks in the catalog by species grouping (Table 3). Overall, we found that the banks in the catalog encompassed 43 species. We summarized the number of banks that had credits for each species or species group, as well as the maximum banking acreage for each species or species group in the catalog. We used the full acreage in a bank for each of the species covered in the bank, unless the banking agreement specifically allocated acreage in the bank to different species. There were 3 banks that had credits available for amphibians, 12 banks with credits for birds, 1 bank with credits for fish, 8 banks with credits for invertebrates, 4 banks with credits for mammals, 4 banks with credits for plants, and 5 banks with credits for reptiles.

3.1 Motivations for Bank Development

We identified three primary motivations for bank development: internal use, regional planning, and a desire for species protection combined with profit. Banks have been developed for internal use by private companies and by governmental agencies. These banks provide mitigation credits

Table 2. Summary of bank size, credits used, and average prices for banks in catalog

Bank	Type of bank	Acres per credit	Number of acres	Number of credits in bank	Number of credits used	Transaction size	Price per credit
Agua Fria	For profit	1	137 in Phase 1	137	100+	Not available	\$7,500-\$15,000
Balcones Canyonlands Preserve	Regional planning	1	26,727	26,727	5000-7000	< 10 acres or > 200 acres	\$3000 for Zone 1 habitat; \$1500 for Zone 2 habitat; \$55 for karst habitat
Chiquita Canyon	Internal use	1	327	327	0	0	Internal use — no price
Coles Levee	For profit	1	6059	6059	5500-5800	Not available	\$650-\$1000
East Plum Creek	Internal use	1	25.3	25.3	Not available	Not available	Internal use — no price
Fitzgerald Ranch	For profit	0.6	37	62	11	Not available	\$65,000
Hickory Pass	For profit	1	500	500	400	Not available	\$5,000
Kern Water Bank	For profit	1	3267	3267	598	3-5 acres usually	\$2,375 per credit plus \$5,000 fee per transaction
Kimball Island — endangered fish habitat in shallow water marsh (other wetland habitats also available; see catalog)	For profit	1	75	75	38	< 1 acre	\$25,000
Mobile County	Regional planning	1.5	222	128	61	1-13 tortoises	\$3,500
Pleasanton Ridge							
Alameda whipsnake	For profit	Not applicable	654.1	9	16	Not available	\$2,000-\$4,000
Red-legged frogs	For profit			771	26	Not available	\$2,000-\$4,000
“Dual species” credits for either species	For profit			112-168		Not available	\$2,000-4,000

Table 2. Summary of bank size, credits used, and average prices for banks in catalog (cont.)

Bank	Type of bank	Acres per credit	Number of acres	Number of credits in bank	Number of credits used	Transaction size	Price per credit
Pope Ranch	For profit	1	391	310	155	0.05-50 credits	\$25,000
Red-cockaded woodpecker USC	For profit	Not applicable	1200	1 breeding cluster of red-cockaded woodpeckers	1	1 cluster	\$100,000
Sedco Hills — California gnatcatchers (other habitats available — see catalog)	For profit	1	180	8 pairs	6 pairs	1-2 pairs	\$5,300
Sheridan — Valley Elderberry Longhorn Beetle (other habitats available — see catalog)	For profit	1800 sq. feet = 1 credit	616	1400	1,310	Not available	\$1800 per elderberry unit plus transplant costs
Southlands Experimental Forest	Internal use and for profit	Not applicable	5300	12 red-cockaded woodpecker clusters	3	1-2 clusters	Internal use — no price
Springtown Reserve — Tiger salamander (wetland creation habitat available — see catalog)	For profit	0.1	52	520	None used	0	No price set
Stillwater Plains	For profit	1800 sq. feet = 1 credit	260	Approx. 100	Not available	Not available	Not available
Swan Road	Internal use	1	592	513	37	37 credits used for 1 project	Internal use — no price
Williamson County	Regional planning	Not defined	220	9 caves	9 caves	9 caves	\$11 million total
Wilson Creek	For profit	1	1850	1850	688.3	Not available	\$5,000-\$12,000
Wilson Valley	For profit	1	1280	1280	991.95	Not available	\$5,000-\$12,000

Table 3. Summary of banks in catalog by species group

Species group	Species	Bank name	Number of banks	Total acres ^a
Amphibians	California tiger salamander	Fitzgerald Ranch, Springtown Reserve	2	89
	Red-legged frogs	Pleasanton Ridge	1	654.1
	Western spadefoot toad	Fitzgerald Ranch	1	37
Birds	American peregrine falcon, Aleutian Canada goose (delisted as endangered species)	Kern Water Bank	1	3,267
	Black-capped vireo	Balcones Canyonlands Preserve	1	Small area within 26,727 acre preserve
	Burrowing owl	Agua Fria, Springtown Reserve	2	189
	California gnatcatcher	Chiquita Canyon, Sedco Hills, Wilson Creek, Wilson Valley	4	3,637
	Golden-cheeked warbler	Balcones Canyonlands Preserve, Hickory Pass	2	27,227
	Red-cockaded woodpecker	Red-cockaded woodpecker USC, Southlands experimental forest	2	6,200
	Swainson's hawk	Coles Levee	1	6,059
Fish	Delta smelt, Sacramento splittail, chinook salmon, steelhead	Kimball Island	1	75
Invertebrates (with habitat type)				
Karst invertebrates	Bone Cave harvestman, Tooth Cave ground beetle	Balcones Canyonlands Preserve, Williamson County	2	Small area at Balcones + 220 acres at Williamson
Karst invertebrates	Kretschmarr Cave mold beetle, Tooth Cave pseudoscorpion, Tooth Cave spider	Balcones Canyonlands Preserve	1	Small area at Balcones

Table 3. Summary of banks in catalog by species group (cont.)

Species group	Species	Bank name	Number of banks	Total acres^a
Karst invertebrates	Coffin Cave mold beetle	Williamson County	1	220
Riparian	Valley elderberry longhorn beetle	Kern Water Bank, Sheridan, Stillwater Plains	3	3,585
Sage scrub	Quino checkerspot butterfly	Wilson Creek, Wilson Valley	2	3,130
Vernal pool	Vernal pool fairy shrimp	Fitzgerald Ranch, Kern Water Bank, Stillwater Plains	3	3,564
Vernal pool	Conservancy fairy shrimp, longhorn fairy shrimp, vernal pool tadpole shrimp	Kern Water Bank	1	3,267
Mammals	San Joaquin kit fox	Agua Fria, Coles Levee, Kern Water Bank	3	9,463
	Giant kangaroo rat, Tipton kangaroo rat	Coles Levee, Kern Water Bank	2	9,326
	Preble's meadow jumping mouse	East Plum Creek	1	25.3
Plants	<i>Legenere limosa</i>	Fitzgerald Ranch	1	37
	Orcutt's grass	Stillwater Plains	1	260
	Pima pineapple cactus	Swan Road	1	513
	Bakersfield cactus, California jewel flower, Hoover's woolly-star, Kern mallow, San Joaquin woolly-threads	Kern Water Bank	1	3,267
Reptiles	Alameda whipsnake	Pleasanton Ridge	1	654
	Blunt-nosed leopard lizard	Coles Levee, Kern Water Bank	2	9,326
	Giant garter snake	Kern Water Bank, Pope Ranch	2	3,658
	Gopher tortoise	Mobile County	1	222
Total number of species covered by banks		43		

for current and planned future impacts to endangered species. For example, the Swan Road bank in Arizona provides internal conservation credits for Pima County, allowing the construction of county facilities and roads. The East Plum Creek and Chiquita Canyon banks were developed by transportation authorities in Colorado and California, respectively, to provide internal credits to mitigate for road construction. The Southlands red-cockaded woodpecker bank in Georgia is designed to provide internal credits for logging activities by International Paper, as well as potentially providing credits for third party use.

Another set of banks was motivated by the need for a regional planning and development strategy. In these areas, development was being restricted because of the need for endangered species mitigation and a local governmental authority or utility recognized the need to create a regional process to protect endangered species and their habitats and facilitate development. The Balcones Canyonland Preserve and the Williamson County Karst Conservation Foundation (both in Texas) are examples of banks that were developed to serve county-wide needs. The Mobile County gopher tortoise bank was developed by the Mobile Area Water and Sewer System to meet the needs of their customers to install septic tanks in areas with gopher burrows.

The largest number of banks appears to be motivated by a combination of a desire to protect endangered species while earning a profit (or covering costs, for nonprofit organizations that sponsor banks). Some bank owners have purchased land or restored habitat solely to create a conservation bank and realize a profit. Examples include the banks developed by Wildlands, Inc. (including Sheridan, Pope Ranch, and Kimball Island) and Springtown Reserve. Other bank owners have found themselves in the position of already owning land that is valuable habitat for endangered species and being unable to develop the land. Conservation banking then becomes a way to realize a profit from existing land holdings, often while maintaining current land uses such as grazing. Examples of this type of bank include the Fitzgerald Ranch, Hickory Pass, and Agua Fria.

3.2 Basis for Credit Development

An issue common to all banking agreements is the need to define and measure the quantity of conservation credits that a bank will be allowed to sell (or use internally). The most common method is to define one credit as equal to one acre of habitat suitable for the species of interest. Either the USFWS or a private contractor employed by the bank owner will survey the property to determine the number of acres of different types of habitat that can be used to generate credits. A similar method bases the number of credits on the number of acres in the bank, but uses a multiplier to adjust the final credit number based on species abundance or perceived habitat quality. At the Fitzgerald Ranch, for example, each acre was equal to 1.7 credits. The least common method for defining credits is to base the number of credits on the number of individuals of endangered species that a bank can support. The Mobile County gopher tortoise

bank defines one credit as equal to one tortoise — the number of tortoises that the bank could support was the basis for defining the total number of credits in the bank.

The most rigorous system for defining credits is the method used at the red-cockaded woodpecker conservation banks. For these banks, one credit is defined as the establishment of a new group of red-cockaded woodpeckers in an area that can support at least 10 breeding clusters. A credit is generated only when a new group of birds is demonstrated to have stayed on a territory for at least six months, including one breeding season. No credits are available for protection of existing breeding clusters.

For incidental takes of federally listed species, the USFWS is responsible for determining the amount of mitigation required for an individual take. This analysis determines the number of credits that a party is required to purchase (or use internally) at a conservation bank. In general, bank owners are not involved at all with the debit determinations. A party wanting to purchase credits at a bank will come to the bank owner already knowing how many credits they are required to purchase. The ratio of credits to debits varies across species and regions, with 1:1 or higher ratios required by USFWS for mitigation.

3.3 Issues Related to Banking Success

The bank owners and operators that we surveyed all viewed their banks as successful from an ecological point of view, with mixed reports regarding economic success. Several bank owners complained that the local USFWS office was not supportive of their bank and limited their access to potential purchasers of credits. The lengthy process to formalize banking agreements also was criticized. Bank owners that enjoyed good relations with the local regulatory agencies and had high demands for their credits were generally very pleased with the overall success of their banking effort. Not surprisingly, banks were especially successful if they held a monopoly for a certain type of credit in an area. The need to protect habitat from vandalism, unauthorized dumping, and other illegal uses was a common concern of bank owners.

4. Credit Transaction Information for Four Banks

In this section, we provide additional information on credit development and transaction data for four banks: the Kern Water Bank, Mobile County Gopher Tortoise Conservation Bank, Sedco Hills, and Springtown Reserve. The Kern Water Bank and Mobile County were able to provide transaction information because they have had fixed credit prices over time. Sedco Hills and Springtown Reserve provided transaction data without pricing information.

4.1 Kern Water Bank

The Kern Water Bank in California includes 19,900 acres, with the primary purpose of storing water in alluvial aquifers for later use (“groundwater banking”). The bank needed to have a habitat conservation plan and incidental take permit approved to be able to conduct groundwater banking — the idea of a conservation bank developed out of the habitat conservation plan negotiations.

Specifically, out of the 19,900 acres at the site, 5,900 acres were designated for basins for recharge activities and 481 acres were designated for permanent water banking facilities. An area of 960 acres was designated to protect existing populations of listed plant species; 5,592 acres between basins were planned to revert to habitat; 530 acres were designated as mitigation for previous California Department of Water Resources projects; and 3,170 acres were designated for farming. The remaining acreage (3,267 acres) was designated for the conservation bank (62 FR 27062 – 27064). The conservation banking agreement established that one credit would be equal to one acre of habitat (U.S. Fish and Wildlife Service et al., 1997). The area and acreage set aside for each of the designations listed above were developed through intensive negotiations and consideration of the value of different habitats at the site.

Between 1998 and July 2003, there have been 38 transactions at the bank for a total of 598 credits purchased (Table 4). Twenty-nine transactions have been with corporations or other private enterprises, two transactions have been with individual landowners, and seven transactions have been with public agencies. The smallest transaction was for one credit (one acre), and the largest transaction was for 151 credits. Prices have remained fixed over this time — each credit costs \$2,000. In addition, there is a \$5,000 administrative fee per transaction (regardless of number of credits) that goes to the bank. The bank also collects \$375 for the California Department of Fish and Game per transaction. The Kern Water Bank authority is considering increasing the price of credits because of a strong demand for credits.

Table 4. Summary of 38 credit transactions at the Kern Water Bank through July 2003

Date	Credit purchaser	Type of party (public agency, corporation, individual)	Credits used	Cost
6/9/1998	Production Specialties	Corporation	3	\$11,375
10/28/1998	Royale Energy Inc.	Corporation	5	\$15,375
1/5/1999	Production Specialties	Corporation	2	\$9,375
11/23/1999	Production Specialties	Corporation	2	\$9,375
12/23/1999	Rubinder Jhaj (DJ Holdings Inc.)	Corporation	12	\$29,375
2/9/2000	Occidental of Elk Hills	Corporation	1	\$7,375
3/10/2000	Williams Communications	Corporation	18	\$41,375

Table 4. Summary of 38 credit transactions at the Kern Water Bank through July 2003 (cont).

Date	Credit purchaser	Type of party (public agency, corporation, individual)	Credits used	Cost
4/19/2000	Kiewit Network Services Inc.	Corporation	7	\$19,375
5/18/2000	Sempra Energy	Corporation	6	\$17,375
6/5/2000	Rio Bravo Tomato Company	Corporation	34	\$73,375
6/14/2000	Williams Communications	Corporation	6	\$17,375
6/27/2000	Trudy Rogers	Individual	1	\$7,375
7/24/2000	Pilot Corporation	Corporation	23	\$51,375
8/1/2000	State of California — CalTrans	Public agency	2	\$9,375
3/12/2001	EOG Resources	Corporation	20	\$45,375
3/20/2001	EOTT Energy LLC	Corporation	24	\$53,375
4/10/2001	Production Specialties	Corporation	3	\$11,375
4/6/2001	City of Shafter	Public agency	5	\$15,375
7/2/2001	GWF Power Systems	Corporation	3	\$11,375
5/23/2001	GWF Power Systems	Corporation	7	\$19,375
6/6/2001	Berkley (Anadarko Petroleum)	Corporation	17	\$39,375
6/8/2001	West Kern Water District	Public agency	1	\$7,375
6/21/2001	Auch/Borrego	Corporation	3	\$11,375
8/29/2001	Production Specialties	Corporation	1	\$7,375
10/19/2001	Pacific Gas & Electric (PG&E)	Public agency	1	\$7,375
11/30/2001	Love's Country Stores	Corporation	24	\$53,375
12/7/2001	GWF Power Systems	Corporation	10	\$25,375
1/29/2002	Fidelity Resources	Corporation	3	\$11,375
3/5/2002	Production Specialties	Corporation	1	\$7,375
3/19/2002	Three landowners (unnamed)	Individual	5	\$15,375
4/24/2002	Kern County	Public agency	20	\$45,375
10/3/2002	West Kern Water District	Public agency	31	\$67,375
10/7/2002	Highway 58 LLC (Vogle)	Corporation	80	\$165,375
10/21/2002	Ennis Homes	Corporation	36	\$77,375
10/22/2002	McDonalds & Lawton Powers	Corporation	1	\$7,375
11/8/2002	Emerald Trail LLC	Corporation	7	\$19,375
5/3/2003	Occidental of Elk Hills, Inc.	Corporation	22	\$49,375
7/2/2003	CA Department of Transportation	Public agency	151	\$307,375
Total			598	\$1,400,250

4.2 Mobile County Gopher Tortoise Conservation Bank

The Mobile County Gopher Tortoise Conservation Bank was established to provide private landowners in Mobile County, Alabama, with a mechanism for mitigating impacts to gopher tortoises resulting from habitat loss. In Mobile County, housing construction was halted in some areas because of the presence of active gopher tortoise burrows. The Board of Water and Sewer Commissioners of the City of Mobile (the Board), which is responsible for septic tank installation in Mobile, applied for an incidental take permit in order to establish a conservation bank to benefit the federally threatened gopher tortoise. Under the conservation bank plan, the Board could issue “certificates of inclusion” to private landowners who purchase mitigation credits from the Board. This would allow private landowners to proceed with septic tank installation in areas with gopher tortoise burrows.

The Board owned suitable habitat for gopher tortoises, but the longleaf pine habitat had been degraded over time by fire suppression, which had allowed hardwood encroachment into the longleaf pine ecosystem. To establish the bank, management was needed to “restore more open, longleaf-pine canopy conditions, reduce hardwood encroachment, reduce invasive exotic species, and restore more natural fire regimes” (Board of Water and Sewer Commissioners of the City of Mobile, no date).

The number of credits available at the 222-acre conservation bank was based on the number of tortoises that the bank could support and the amount of suitable habitat at the site (205 acres). Each credit represents one tortoise. Parties wanting to purchase credits are required to pay a fee for habitat management and to cover the cost of translocating a tortoise to the site if a tortoise is present on their property (Board of Water and Sewer Commissioners of the City of Mobile, no date).

The habitat conservation plan specified that the stocking rate for the conservation bank would be 80% of the target density of 1.2 acres per tortoise, resulting in a stocking rate of 1.5 acres per tortoise at the bank. The decision to use an 80% stocking rate was based on the need to allow for natural growth and reproduction of the population at the site. The habitat conservation plan authorized the Board to offer 125 credits to the public, which would require 188 acres of land. In addition, the baseline population at the site was estimated to be 15 tortoises — these tortoises were estimated to need 1.2 acres per tortoise, for a total of 18 acres required. The total number of acres required for the translocated tortoises and the baseline population is 205 acres, which equals the amount of available habitat at the bank (Board of Water and Sewer Commissioners of the City of Mobile, no date).

Between 2001 and November 2003, there have been 18 transactions at the bank for a total of 61 credits purchased (Table 5). The Board did not provide us with information about the identity of the parties purchasing credits. The smallest transaction was for one credit, and the largest

Table 5. Eighteen credit transactions at the Mobile County Gopher Tortoise Conservation Bank

Date	Number of tortoises	Mitigation fee
8/2/2001	1	\$3,500
8/6/2001	13	\$45,500
8/14/2001	2	\$7,000
9/26/2001	4	\$14,000
9/26/2001	1	\$3,500
1/9/2002	5	\$17,500
2/20/2002	1	\$3,500
4/23/2002	2	\$7,000
7/15/2002	5	\$17,500
8/6/02	1	\$3,500
9/24/02	1	\$3,500
5/30/02	2	\$7,000
7/3/03	12	\$42,000
7/10/03	1	\$3,500
10/24/03	1	\$3,500
10/28/03	3	\$10,500
11/21/03	5	\$17,500
Total	61	\$213,500

transaction was for 13 credits. Prices have remained fixed over this time — each credit costs \$3,500 per tortoise. The Board has applied for funding to cover the mitigation costs for parties that cannot afford the banking fee.

Bruce Porter, Fish and Wildlife biologist from the local USFWS field office that oversees the bank, noted that one problem the bank has faced is illegal tortoise dumping (personal communication, December 1, 2003). Because the location of the bank was publicized (which the bank managers now realize was a mistake), tortoises have been dumped at the bank site without any payment of the mitigation fee and without testing of the tortoises for upper respiratory disease which could spread to other tortoises at the bank.

4.3 Sedco Hills

The 180 acre Sedco Hills Conservation Bank was started by The Environmental Trust, a nonprofit agency in Riverside County, California, as a means to help conserve habitat and protect the federally threatened California gnatcatcher. Credits were defined on the basis of one credit equals one acre, for the two different habitat types available at the site (148 acres of Riversidian sage scrub and 31.85 acres of Chamise chaparral). In addition, credits are available for eight pairs of gnatcatchers at the site. Purchase of each gnatcatcher credit requires purchasing 20 acres of supporting habitat per pair of birds. Biological surveys conducted over several years were used by the USFWS to determine that eight pairs of California gnatcatchers were supported on the site (Leslie Beck, The Environmental Trust, personal communication, December 2, 2003).

Between 2000 and April 2003, there have been seven transactions at the bank, for a total of 148 credits of sage scrub, 1.2 credits of chaparral, and 6 credits for California gnatcatchers (Table 6). On average, habitat credits sell for \$3,950 per credit, while credits with the California Gnatcatcher sell for \$5,300 per credit. Transaction data were provided to us by Leslie Beck at The Environmental Trust, but without individual pricing data for each transaction.

Table 6. Seven credit sales at the Sedco Hills Conservation Bank

Date	Buyer	Project name	Riversidian sage scrub	Chamise chaparral	Gnatcatcher pair
6/14/00	Railroad Canyon-Lake Elsinore L.P.	Railroad Canyon Project, portion Tract 20704	20		1
1/25/01	Granite Homes dba Elsinore 98 LLC	Granite Homes Project, Tract 20705	9.7		
3/1/01	Williams Communications Inc.	Fiber Optic Cable Installation- Phoenix, AZ to Riverside County, CA	8.0		
9/7/01	Rancho California Water District	Santa Margarita River Outfall Project No. 98048	1.5		
1/21/02	Barrington Heights LLC	Sun City Project	18.8	1.2	1
2/8/02	AGK Group LLC Temecula Village Dev. LP	Temecula Ridge Apartments and Temecula Village Development	45.0		2
4/9/03	Antelope Road LP	Antelope Road Project	45		2
Total			148	1.2	6

4.4 Springtown Natural Communities Reserve

Three different types of habitat credits are available at the Springtown Natural Communities Reserve: alkali meadow habitat, California tiger salamander breeding and estivation habitat, and freshwater palustrine emergent seasonal wetlands. Credits were defined on an acreage basis, with one credit equaling 0.1 acre. Credits were defined in terms of fractional areas to simplify record-keeping for small transactions. The minimum transaction size is one credit.

The number of credits available for each habitat type was defined based on a combination of preserving existing alkali meadow habitat and creating 31 acres of seasonal wetlands on the site that had existed before subdivision development in the 1950s. The bank protects one listed species (state and federally listed endangered palmate-bracted bird's beak) and a state species of concern, the California tiger salamander. There is no active market for credits for either of these species, however. The bank actively sells credits for wetlands creation, but at the moment there is no active market for credits for California tiger salamander because of the availability of cheaper credits in the area. This bank is able to maintain itself as a conservation bank for endangered species because it also serves as a wetlands mitigation bank, where the market for credits is more active. A summary of the wetland transactions at the bank is given in Table 7. There have been a total of 12 transactions at the bank, ranging in size from 1 credit (0.1 acres) to 156 credits (15.6 acres). The current price for wetland creation credits is \$25,000 per credit (\$250,000 per acre).

Table 7. Wetland creation credit transactions at Springtown Reserve

Mitigation/project name	Mitigation acres	Mitigation credits
Carr/Baytech+	15.6	156
Kaiser	0.2	2
H.G.C. II/Zelman Kreg-Oc (Koll)	0.7	7
Greystone	0.66	6.6
Alameda County	0.1	1
Ho/Burne	0.87	8.7
Frontier Ti	0.1	1
Greystone II (E)	2	20
URS Greiner/ Caltrans	1.18	11.8
IMO	0.7	7
HPS&S	1.5	15
BART	0.9	9
Total	24.51	245.1

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Attachment — Catalog of Conservation Banks

The attached tables present a catalog of 22 conservation banks located across the United States. The banks were chosen to represent different regions of the United States and different species. The information provided for each bank includes its location, size, species and habitats covered, the methods used to define credits and debits, transaction history, ownership history and current status, management and operation, performance monitoring, and subjective appraisals. Full citations for the reports and documents referenced in the catalog are provided at the end of this attachment.

Agua Fria Multi-Species Mitigation Bank

Information categories		Responses
Background		
Stratus Consulting interviewer	David Mills	
Interview date	10/6/03	
Bank name	Agua Fria Multi-Species Mitigation Bank	
Location		
Address	Jasper Sears Road	
City	Gustine	
State	CA	
County/location	Merced	
Contact for information		
Name	Brian Boroski (through contacts provided by Donn Campion — bank owner)	
Phone	559-449-1423	
E-mail	bboroski@harveyecology.com	
Organization	H.T. Harvey & Associates	
Title/role	Wildlife ecologist — Agua Fria Bank Project Manager	
Additional contact, if any		
Name	Donn Campion	
Phone	408 867 1593	
E-mail	dcampion@aguafria.net	
Organization	n/a	
Title/role	Owner of Agua Fria Multi-Species Mitigation Bank	
URLs with information		
URL#1	http://sacramento.fws.gov/es/bank_list.htm	
URL#2		
Size of bank		
No. of acres in bank (note if parcel not contiguous)	Bank is planned for 3,234 acres which would be implemented in two phases. Phase I consists of 137 acres and has been activated and is near full subscription. Phase II consists of 3,097 acres. The owner is close to activating the second phase, assuming that no major changes occur.	
No. of acres of buffer areas, if any	None formalized.	
No. of credits in bank	Across both phases there will be 3,200 credits available.	
No. of credits used or sold to date	Over 100 credits sold to date through Phase I of the bank.	
Species/habitats/credits available	C = California threatened species; FE = federally endangered; FT = federally threatened	
Amphibians		
Birds	Burrowing owl (C)	
Fish		
Invertebrates		
Mammals	San Joaquin kit fox (FE)	

Agua Fria Multi-Species Mitigation Bank

Information categories	Responses
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits are defined in terms of acreage. Project impacts to San Joaquin kit fox often require mitigation ratios of 1:1 up to 3:1 depending on the habitat affected. Therefore, a project impacting 100 acres may need to purchase from 100 to 300 credits to mitigate for impacts. Mitigation for impacts to burrowing owls is negotiated with the California Department of Fish and Game (CDFG), but the common requirement is to preserve 6.5 acres of habitat for each pair of owls impacted by a project.
What was the method used for defining and measuring credits?	Credits are based on a habitat survey that assessed the acreage of habitat suitable to San Joaquin kit foxes or burrowing owls. Habitat was surveyed to establish value for target species.
How were multiple species issues addressed?	Credits are generally exclusive in that an acre cannot be sold twice to separate parties even if the debits being offset are for different species. The exception to this is when an interested party needs to purchase credits to offset impacts to both San Joaquin kit foxes and burrowing owls. In this case, the number of credits required for purchase is based on the species requiring the largest number of credits, with the debit for the other species assumed to be offset. For example, if impacts to kit fox required 150 acres of compensation and impacts to burrowing owls required 100 acres of compensation, the total amount of compensation required from a single party would be only 150 acres.
What is the service area for the bank?	Kit fox service area includes areas in Stanislaus, Merced, and Fresno counties west of the San Joaquin River. The primary burrowing owl service area includes areas in Stanislaus, Merced, and Fresno counties west of the San Joaquin River, San Benito County, and southern Santa Clara County. Santa Clara County north of Hwy 152 provides a secondary service area. Impacts in this area require a ratio of 2:1 for mitigation at the bank (i.e., 2 acres of credit are required to offset each acre of debit).
Can we get the Conservation Banking Agreement?	Habitat Management Plan included with supplemental materials. See H.T. Harvey & Associates, 2001. Donn Campion has a copy of the Conservation Banking Agreement.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments that could use credits from this bank are made with USFWS and CDFG staff.
Can different species be "traded off" for debits vs. credits?	No.

Agua Fria Multi-Species Mitigation Bank

Information categories	Responses
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Sales of credits to date have been exclusively to private parties.
Total number of transactions?	Not available.
Average size	Not available.
Average price or change in price over time	Credits have generally been sold for \$15,000 each, but to facilitate sales, the owner has the discretion to negotiate on the price with each transaction. As a result, the effective price per credit may have effectively ranged from roughly \$7,500 to \$15,000.
<i>History/status of bank</i>	
Current status	The bank is in active operation and is nearing full subscription on its planned first phase that encompasses 137 acres. From all indications it sounds as if the second phase, covering 3,097 acres, will be made available to interested parties in the near future.
Who owns bank?	Dr. Donn Campion (this is a private landholding and is not associated with the owner's primary residence).
Has ownership changed – If so, why?	No.
Who can use the bank?	All interested public and private parties who can pay the required fee.
Establishment date	2002
Date first credit used	2002
<i>Management and operation</i>	
Who manages the habitat?	H.T. Harvey & Associates is in charge of the habitat monitoring and management (Brian Boroski is the project manager).
Who markets the credits?	Active marketing has not been required given the need for mitigation credits to the species serviced by the bank.
Who owns the land?	Dr. Donn Campion
What types of management activities take place?	The bank's habitat management plan has invasive species plans to control both plants and predatory wildlife such as red foxes. The plan also contains restoration elements to address degraded areas of habitat, including fencing along selected streams and seasonally wet drainage swales. Grazing practices will be managed to favor habitat conditions for burrowing owls and kit foxes, and their preferred prey species. Overall the plan emphasizes an adaptive management strategy.
Did active management for restoration need to take place to gain credits?	No. Credits are effectively based on preservation of the existing habitat. However, certain management activities did occur before operation of the bank, such as fencing of riparian areas and ending rodent control activities, to allow the prey base for kit foxes and burrowing owls to increase.

Agua Fria Multi-Species Mitigation Bank

Information categories	Responses
What are long-term management arrangements?	Not currently known whether property will be retained by owner or sold or transferred to a resource management agency once the active sale of credits in the bank is completed.
What is planned lifespan of bank?	The period of active credit sales is not currently being forecast. With the sale of any Phase II credits, however, the entire bank acreage will have permanent conservation easements attached to the property. The land will be managed in perpetuity to maintain habitat and conservation values.
What types of monitoring take place to ensure bank “performance”?	Species specific surveys and periodic habitat suitability surveys are currently envisioned for the bank and described in the available habitat management plan for the bank.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	The management plan for the bank states that focal habitat and species surveys will be conducted annually.
Are there provisions for monitoring to trigger remedial actions?	The habitat management plan identifies an “adaptive management process,” but does not identify what conditions would trigger additional restoration or management actions.
Can monitoring reports be obtained?	Bank is barely a year old so annual monitoring has not yet taken place.
<i>Subjective appraisals</i>	
Impetus to start bank	Development opportunities for the land were effectively constrained given the nature of surrounding development that has left the land as the last viable habitat corridor for San Joaquin kit foxes and other species in the region. The bank’s owner determined that the land’s highest value could be realized through development of a conservation bank that would also place only minor restrictions on current activities that occur on the ranch (e.g., modification of grazing practices).
Issues at startup	None apparently.
Difficulty in marketing credits	No.
Issues with current regulations	None.
Is bank a success?	Bank appears to be an economic success given the speed with which the credits in the first phase have been purchased along with the plans to pursue the sale of credits in the second phase of the bank, which will result in a permanent conservation easement on the entire property. Development of the bank has benefited regional habitat and species management programs through improved habitat management. The permanent conservation easements on the bank property protect the land in perpetuity; however, the development potential of the land was apparently already severely constrained, given its function as a habitat corridor in the region.

Agua Fria Multi-Species Mitigation Bank

Information categories		Responses
Do they know of any banks that were started and failed – If so, why?		No.
<i>Relevant permits</i>		Not available
<i>Review notes</i>		This version reviewed by Brian Boroski and sent to Stratus Consulting 10/17/03.

Balcones Canyonlands Preserve

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	Diana Lane
Interview date	November 25, 2003 (site visit November 21, 2003)
<i>Bank name</i>	Balcones Canyonlands Preserve
<i>Location</i>	
Address	Western Travis County
City	Austin
State	TX
County/location	Travis
<i>Contact for information</i>	
Name	Kevin Connally
Phone	(512) 854-9437
E-mail	kevin.connally@co.travis.tx.us
Organization	Travis County
Title/role	Environmental Specialist and Balcones Canyonlands Conservation Plan Coordinator
<i>Additional contact, if any</i>	
Name	William Conrad
Phone	512 263 6430
E-mail	william.conrad@ci.austin.tx.us
Organization	Water & Wastewater Utility, City of Austin
Title/role	Wildland Conservation Division Manager
<i>URLs with information</i>	
URL#1	http://www.co.travis.tx.us/tnr/bccp/default.asp
URL#2	http://www.ci.austin.tx.us/preserves/bcp.htm
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	26,727 acres assembled as of November 25, 2003 with additional 460 acres close to signed contracts. Target acreage for permit is 30,428 acres.
No. of acres of buffer areas, if any	No buffer areas.
No. of credits in bank	1 acre = 1 credit; Zone 1 = confirmed nesting habitat; Zone 2 = believed to be good habitat, no data on actual bird presence.
No. of credits used or sold to date	Approximately 5,000-7,000 credits have been used up.
<i>Species/habitats/credits available</i>	
	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	Black-capped vireo (FE), golden-cheeked warbler (FE)
Fish	
Invertebrates	Bone Cave harvestman spider (FE), Bee Cave harvestman spider (FE), Tooth Cave pseudoscorpion (FE), Tooth Cave spider (FE), Tooth Cave ground beetle (FE), Kretschmarr Cave mold beetle (FE)

Balcones Canyonlands Preserve

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 credit = 1 acre of habitat in the preserve.
What was the method used for defining and measuring credits?	Biological Advisory Team defined necessary acreage for regional habitat conservation plan based on what is necessary to ensure survival of species in this area. The preserve contains the best remaining golden-cheeked warbler habitat in the center of its range; the preserve also is located on the eastern edge of black-capped vireo habitat.
How were multiple species issues addressed?	Habitat managed for both bird species; karst areas protected for cave invertebrates.
What is the service area for the bank?	Western Travis County — 567,000 acre service area.
Can we get the Conservation Banking Agreement?	The conservation banking provisions are included within the regional habitat conservation plan (HCP), which is a massive document, not available electronically. Excerpts from the HCP are available at http://www.ci.austin.tx.us/preserves/bcp.htm .
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	USFWS created habitat maps that show areas of Zone 1 and Zone 2 habitat. The number of acres of habitat in each zone determines the required mitigation fee for a private party. For Capital Improvement Projects proposed by the City of Austin or Travis County, 1 acre of Zone 1 habitat is compensated with 1 acre of credit; 1 acre of Zone 2 habitat is compensated for with 1/2 acre of credit.
Can different species be “traded off” for debits vs. credits?	Not an issue here. Mitigation at the preserve is available for impacts to golden-cheeked warbler, black-capped vireo, and karst habitat.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	
Who used credits?	Mostly private parties.
Total number of transactions?	Approximately 400 applications have been received for “participation certificates” that allow private parties to pay a fee to the preserve for mitigation.
Average size	Most transactions are either smaller than 10 acres or larger than 200 acres, reflecting the needs of small versus large developments.

Balcones Canyonlands Preserve

Information categories	Responses
Average price or change in price over time	Fee reduction has been in effect from 1999 to 2004. Current fees are \$3,000 per acre for Zone 1 habitat; \$1,500 per acre for Zone 2 habitat; and \$55 per acre for karst habitat. Original fee structure was \$5,500 per acre for Zone 1 habitat; \$2,750 per acre for Zone 2 habitat; and \$55 per acre for karst habitat. There are additional reduced fee provisions for developing a single-family lot on a larger tract that remains intact (\$1,500 one-time fee) or for small agricultural improvements.
<i>History/status of bank</i>	
Current status	Active
Who owns bank?	The incidental take permit, and the associated multi-species habitat conservation plan, which authorizes the conservation bank was issued jointly to Travis County and the City of Austin.
Has ownership changed – If so, why?	No.
Who can use the bank?	Public agencies and private parties.
Establishment date	Permit issued in May 1996.
Date first credit used	Not addressed.
<i>Management and operation</i>	
Who manages the habitat?	Separate tracts managed by three “managing partners:” Travis County, the City of Austin, and the Lower Colorado River Authority. In addition, the Travis Audubon Society and The Nature Conservancy manage land that is part of the preserve.
Who markets the credits?	Travis County administers the public participation program; the City of Austin manages the infrastructure mitigation program.
Who owns the land?	Ownership of separate tracts by Travis County, the City of Austin, the Lower Colorado River Authority, the Travis Audubon Society, and The Nature Conservancy.
What types of management activities take place?	Prescribed fire and brush removal to maintain open shrubland conditions for black-capped vireos; control of harmful species, including brown-headed cowbirds, white-tailed deer, feral hogs, and fire ants. Control of exotic plant species.
Did active management for restoration need to take place to gain credits?	Active management and restoration are needed to create and maintain habitat for black-capped vireos, which require mid-successional habitat in this area. Active ranches in the area had previously maintained habitat in a suitable state for black-capped vireos, but the loss of ranches to development required new management actions to create the necessary habitat. Yellow-cheeked warblers and the six karst invertebrates require protection of existing habitat.
What are long-term management arrangements?	Managing partners expect to manage land in perpetuity.
What is planned lifespan of bank?	The incidental take permit, and the associated multi-species habitat conservation plan, was granted for 30 years.

Balcones Canyonlands Preserve

Information categories	Responses
What types of monitoring take place to ensure bank “performance”?	Population surveys for yellow-cheeked warblers and black-capped vireos, surveys of nesting success, vegetation surveys.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annual monitoring occurs and is compiled in an annual report.
Are there provisions for monitoring to trigger remedial actions?	Adaptive management plans are an integral part of the land management plans. There are no specific triggers for remedial actions.
Can monitoring reports be obtained?	We did not obtain any of the monitoring reports.
<i>Subjective appraisals</i>	
Impetus to start bank	In the early 1990s, intense development pressure in the region led to a number of parties coming together for different reasons. Environmental interests were working to ensure survival of endangered species and habitat protection in the area; development and landowner interests were concerned with the lengthy and costly process needed to obtain an incidental take permit; the City of Austin and Travis County had a large economic stake in creating a mechanism that would not slow down economic development. All of these groups (city and local government, developers, nonprofit agencies, USFWS) worked cooperatively to develop the first regional multi-species habitat conservation plan in the nation, which provided for substantial habitat protection and a simple mechanism (fee-based “participation certificates”) for mitigating development of endangered-species habitat.
Issues at startup	In Texas, there is a long history of private land ownership and private property rights. At first, there was some public sentiment against the purchase of large tracts of land for the preserve, because it was seen as a “government land grab.” Obtaining funding for purchasing the land was an important hurdle to overcome. The City of Austin passed a bond issue that enabled Austin to buy large tracts of land (especially because it occurred at the time when failed Savings and Loan Associations were selling land cheaply). Travis County did not pass a bond-issue, but has been successfully writing grants for federal matching funds, which provide 3 federal dollars for each local dollar.
Difficulty in marketing credits	No — the local USFWS office is supportive of fee-based mitigation through the preserve.
Issues with current regulations	Not addressed.

Balcones Canyonlands Preserve

Information categories	Responses
Is bank a success?	Yes — the preserve has been successful at protecting large tracts of critical habitat for endangered species and also has facilitated development in the region through streamlining the mitigation process. This project is seen as a model for getting interest groups, agencies, and landowners to work together cooperatively to find solutions for protecting endangered species without halting development.
Do they know of any banks that were started and failed – If so, why?	No. The development of a large publicly-funded and managed preserve that functions as a conservation bank (with credits far exceeding demand at the moment) has eliminated any incentive for developing private conservation banks in the region.
<i>Relevant permits</i>	Habitat Conservation Plan Permit No. 788841
<i>Review notes</i>	

Chiquita Canyon

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		Diana Lane
Interview date		12/8/2003
<i>Bank name</i>		Chiquita Canyon
<i>Location</i>		
Address		Near Rancho Mission Viejo
City		
State		CA
County/location		Orange
<i>Contact for information</i>		
Name		Valerie McFall
Phone		949.754.3400 ext. 475
E-mail		mcfall@sjhtca.com
Organization		Orange County Transportation Corridor Agencies
Title/role		
<i>Additional contact, if any</i>		
Name		Jeff Newman
Phone		(619) 431-9440
E-mail		
Organization		U.S. Fish and Wildlife Service
Title/role		
<i>URLs with information</i>		
URL#1		http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/orange.shtml
URL#2		
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		327 acres set aside as bank.
No. of acres of buffer areas, if any		Total parcel is 1182 acres.
No. of credits in bank		327; 1 acre = 1 credit.
No. of credits used or sold to date		No credits used so far.
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		California gnatcatcher (FT)
Fish		
Invertebrates		
Mammals		
Plants		
Reptiles		

Chiquita Canyon

Information categories	Responses
Habitat types	Coastal sage scrub
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Acres
What was the method used for defining and measuring credits?	Area for bank based on actual location of gnatcatchers.
How were multiple species issues addressed?	Not applicable.
What is the service area for the bank?	Orange County
Can we get the Conservation Banking Agreement?	The banking agreement is a large, multi-volume document that is not easy to copy or send.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Based on impacts to coastal sage scrub and California gnatcatchers from Transportation Corridor Agency projects.
Can different species be "traded off" for debits vs. credits?	Not applicable.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Credits in bank are being reserved for roadway extension of foothills transportation corridor south.
Total number of transactions?	If the extension occurs, all credits will be used up.
Average size	Not applicable.
Average price or change in price over time	Not applicable.
<i>History/status of bank</i>	
Current status	Waiting to see if roadway extension occurs.
Who owns bank?	Transportation Corridor Agency
Has ownership changed – If so, why?	No.
Who can use the bank?	Designed for internal use; allowed to sell credits for third parties.
Establishment date	Jul-96.
Date first credit used	No credits used yet.

Chiquita Canyon

Information categories	Responses
<i>Management and operation</i>	
Who manages the habitat?	Overall management by Transportation Corridor Agency, with hands-on work done by consultants.
Who markets the credits?	No marketing, unless sales to third parties begin.
Who owns the land?	Transportation Corridor Agency purchased a conservation easement on land owned by the Rancho Mission Viejo company.
What types of management activities take place?	Invasive species management; testing for growth of coastal sage scrub and grassland; oak management; cactus wren surveys; gnatcatcher surveys; small mammal surveys; monitoring of wildlife undercrossings under roadway.
Did active management for restoration need to take place to gain credits?	Yes. Habitat had been heavily grazed by cattle, creating problems with invasive species. After the conservation easement was put in place, the land has required intensive management for invasive species to enhance coastal sage scrub.
What are long-term management arrangements?	Long-term plan is to transfer land to the Orange County Southern Natural Communities Conservation Program (a regional planning effort).
What is planned lifespan of bank?	No set life-span — the Transportation Corridor Agency will utilize the bank until all credits have been used up.
What types of monitoring take place to ensure bank “performance”?	Monitoring of vegetation and wildlife use of site documents habitat quality.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Monitoring occurs throughout the year and is reported annually.
Are there provisions for monitoring to trigger remedial actions?	Not specifically. The bank is managed according to a management plan agreed to in 1996. The agency is looking at revising the management plan to incorporate new findings and management techniques.
Can monitoring reports be obtained?	Not easy to send.
<i>Subjective appraisals</i>	
Impetus to start bank	The Transportation Corridor Agency knew that the southern extension of the foothills transportation corridor would occur eventually and would require mitigation. It was more cost-effective for the Agency to put the conservation easement in place in advance of building the project.
Issues at startup	Negotiations between landowner and resource agency.
Difficulty in marketing credits	Not applicable.
Issues with current regulations	None identified.

Chiquita Canyon

Information categories	Responses
Is bank a success?	Bank seen as a success because of preserving large area of open space in urban setting. It is still unknown whether all credits will be used internally, or whether some credits will be sold to third parties.
Do they know of any banks that were started and failed – If so, why?	The Agency is aware of banks that were established, but have not had much demand for credits because nearby habitat areas were preserved by the county.
<i>Relevant permits</i>	
<i>Review notes</i>	

Coles Levee Ecosystem Preserve

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Mills
Interview date	10/16/03
<i>Bank name</i>	Coles Levee Ecosystem Preserve
<i>Location</i>	
Address	The bank itself does not have a real address. For correspondence, the Quad Knopf office address is: 5500 Ming Avenue, Suite 410 Bakersfield, California 93309
City	Bakersfield
State	CA
County/location	Kern
<i>Contact for information</i>	
Name	Wes Rhodehamel
Phone	661 835 8300 (ext 105)
E-mail	wesr@quadknopf.com
Organization	Quad Knopf (engineering firm)
Title/role	Senior Ecologist — manager for implementing habitat management and monitoring programs.
<i>Additional contact, if any</i>	
Name	
Phone	
E-mail	
Organization	
Title/role	
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/kern.shtml
URL#2	http://sacramento.fws.gov/es/bank_list.htm
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	6,059 acres.
No. of acres of buffer areas, if any	Buffer acres are not explicitly a component of the bank. However this bank is located in a cluster of conservation/mitigation banks that includes Coles Levee, the Kern Water Bank, and banks established by Chevron and Occidental Petroleum.
No. of credits in bank	6,059 credits.
No. of credits used or sold to date	Approximately 5,500 to 5,800 credits of the initial 6,000 have been used or sold to date. Uncertainty in the exact number reflects differences in the accounting of credit sales and use by Quad Knopf, the firm that has been tracking the data since the bank was developed, and the current owner AERA.
<i>Species/habitats/credits available</i>	C = California threatened species; FE = federally endangered; FT = federally threatened

Coles Levee Ecosystem Preserve

Information categories	Responses
Amphibians	
Birds	Swainson's hawk (C)
Fish	
Invertebrates	
Mammals	San Joaquin kit fox (FE), tipton kangaroo rat (FE), giant kangaroo rat (FE)
Plants	
Reptiles	Blunt-nosed leopard lizard (FE)
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits are based on acres of habitat and are assigned with 1 acre of habitat = 1 credit.
What was the method used for defining and measuring credits?	Credits were assigned on a simple 1:1 approach that evaluated the acreage being designated for the bank. Because this bank was one of the initial, and perhaps the first conservation bank established in the country, it is now recognized that a more sophisticated evaluation of the suitability of the habitat would be a preferred basis for establishing baseline credits if the bank were being established today (e.g., credits based on a combined assessment of species abundance and habitat suitability).
How were multiple species issues addressed?	Multiple species issues are not explicitly addressed as credits are not assigned or allocated to specific species. However, multi-species issues are addressed in practice with credits being mutually exclusive (i.e., once sold, a credit can not be reused to mitigate for impacts to a second species, even if the two can coexist in the same area). There are no rules or guidelines in place to alter the required scale of mitigation if a potential buyer needs to address impacts to several species.
What is the service area for the bank?	Kern, Kings, and Tulare counties.
Can we get the Conservation Banking Agreement?	We did not obtain the agreement.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be "traded off" for debits vs. credits?	No.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	

Coles Levee Ecosystem Preserve

Information categories	Responses
Who used credits?	A mix of private and public parties have used credits from the banks. Most credit transactions have occurred in large blocks to mitigate for public development impacts and impacts from private oil and gas development projects.
Total number of transactions?	Not available.
Average size	Not available.
Average price or change in price over time	Prices are negotiated between the bank owner and the buyer for each transaction. Prices have varied considerably over time as a function of changes in the level of supply and demand for the credits and as a function of discounts provided to buyers, especially for large blocks of credits. The credit price has roughly moved in the range of \$650 to \$1,000 but it is expected to rise again perhaps to \$1,200 as the remaining credits are sold. The credit price includes three components: a fee, a management endowment, and a fencing endowment. The fee is collected and kept by the owner. The management and fencing endowments have been roughly \$375 and \$100 per credit over the bank's existence and these are accounted for separately in each transaction and provided to the state. The state is supposed to return the funds to the designated manager for the bank's upkeep and maintenance, but reimbursement has not occurred in the past several years. The owner has continued management activities as prescribed in the management plan.
<i>History/status of bank</i>	
Current status	Bank is currently operating and has available credits for sale. However, these credits may be held for internal mitigation needs by the current owner and may not be available to the public.
Who owns bank?	AERA Energy LLC
Has ownership changed – If so, why?	Bank ownership has changed over time with shifts in the current and anticipated future activities of firms involved with oil and gas exploration and development in the region of the bank and in California in general. Original owner/developer of the bank was ARCO (Atlantic Richfield Company).
Who can use the bank?	All USFWS approved parties can use the bank.
Establishment date	The conservation easement for the bank was signed in October 1992 but the formal banking agreement was signed in March 1996.
Date first credit used	1996
<i>Management and operation</i>	
Who manages the habitat?	Quad Knopf has managed the habitat for the bank owners since the development of the bank.
Who markets the credits?	Active marketing of the credits has not generally been required given the local knowledge about the bank in the development community combined with the USFWS staff knowledge of the bank.
Who owns the land?	AERA LLC

Coles Levee Ecosystem Preserve

Information categories	Responses
What types of management activities take place?	Active management of the habitat, separate from monitoring, is not a feature of the bank as credits were essentially allocated assuming preservation of habitat at the time.
Did active management for restoration need to take place to gain credits?	No. Initial credit allocation was made assuming habitat preservation instead of restoration.
What are long-term management arrangements?	Currently the bank is structured so that it will be privately managed in perpetuity. California Department of Fish and Game (CDFG) could take control of the land if they determine that the owner is “nonperforming.” In this case, however, management would still be undertaken by a subcontractor such as Quad Knopf because CDFG cannot hire staff specifically for management of a designated parcel.
What is planned lifespan of bank?	The conservation easement is established in perpetuity. The recent sale of the bank to AERA and apparent confusion over the number of available credits make it uncertain how much longer the bank will be looking to actively sell credits. After credit sales are closed to the public, there will likely be a number of credits remaining in the bank that will be reserved for internal mitigation requirements of the owners.
What types of monitoring take place to ensure bank “performance”?	Monitoring includes small mammal surveys, San Joaquin kit fox spot lighting for natal dens, and completion of survey transects for leopard lizards among other activities.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	The monitoring described above is conducted yearly.
Are there provisions for monitoring to trigger remedial actions?	No.
Can monitoring reports be obtained?	We did not obtain monitoring reports.
<i>Subjective appraisals</i>	
Impetus to start bank	The bank was developed to resolve legal issues stemming from ARCO’s failure to obtain a permit from USFWS for development of an oil well in an area where listed species were present. A compromise was reached that included development of the conservation bank to avoid further legal action against ARCO. The state and USFWS were very interested to implement a test case for conservation banking.

Coles Levee Ecosystem Preserve

Information categories	Responses
Issues at startup	None. This was a fast-tracked project where all the regulators were on board from the beginning. As an example of this it only took 8 months to receive the USFWS approval of the Incidental Take (Section 10a) permit when submitted in 1996 even though this period coincided with the federal government shutdown. Similarly it took less than a year to receive approval for the corresponding state permit.
Difficulty in marketing credits	No. The bank was developed during a time of active oil and gas exploration and infrastructure development along with a period of significant regional public works projects (e.g., Bakersfield Metro project).
Issues with current regulations	None. Noted in discussion that a similar project developed today would likely have a more elaborate initial consideration of habitat suitability within the bank's acreage along with a more detailed initial assessment of species presence in order to establish initial credit allocation.
Is bank a success?	Yes. Ecologically, an extensive contiguous habitat for a number of listed species has been preserved in perpetuity. Economically, the development of the bank has allowed the owners to realize an income stream from land that would otherwise have probably remained idle as a result of the presence of the listed species and limited interest in further oil and gas development in the immediate area. Economic assessment is somewhat clouded in a straight accounting sense by the failure of the state to return management endowment funds to the owner's designated habitat managers but this has not limited sale of credits or scope of management/monitoring. Perhaps most importantly from the point of view of the bank's original owner/developer (ARCO), the bank was a success as it turned a potential legal and public relations nightmare (see impetus to start bank above) into a project for which the company was roundly applauded for their environmental commitment. In addition, continued out-of-pocket funding of management activities by the current owners generates good relations with the state and federal agencies.
Do they know of any banks that were started and failed – If so, why?	No.
Relevant permits	Incidental Take Permit Number PRT-809228.
Review notes	

East Plum Creek Conservation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		Diana Lane
Interview date		November 5, 2003
<i>Bank name</i>		East Plum Creek Conservation Bank
<i>Location</i>		
Address		
City		
State		CO
County/location		Douglas
<i>Contact for information</i>		
Name		F. Yates Opperman
Phone		303 757-9497
E-mail		Francis.Oppermann@dot.state.co.us
Organization		Colorado Department of Transportation (CDOT)
Title/role		Environmental Planner
<i>Additional contact, if any</i>		
Name		Roland Wostl
Phone		303-757-9788
E-mail		Roland.Wostl@dot.state.co.us
Organization		Colorado Department of Transportation
Title/role		Manager, Environmental Planning and Policy Unit
<i>URLs with information</i>		
URL#1		http://www.epa.gov/fedrgstr/EPA-SPECIES/2002/December/Day-26/e32464.htm
URL#2		
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		25.3 acres.
No. of acres of buffer areas, if any		Working on expanding the size of the bank; hoping to double the size; working with Castle Rock and Douglas County.
No. of credits in bank		25.3 credits potentially available — not all credits have been certified yet.
No. of credits used or sold to date		Bank built around needs of specific projects.
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		
Fish		
Invertebrates		
Mammals		Preble's meadow jumping mouse (FT)
Plants		

East Plum Creek Conservation Bank

Information categories	Responses
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 credit = 1 acre.
What was the method used for defining and measuring credits?	Conservation credits for the bank were established for meeting success criteria in different areas. A total of 6.32 credits were certified at bank establishment to reflect the conservation easement and the initial habitat restoration activities that took place. Achieving success criteria for maintaining alluvial groundwater levels will release 12.65 credits. Achieving success criteria for habitat vegetation will release 3.80 credits. Achieving success criteria for the Preble's meadow jumping mouse based on presence and population density will release 2.53 credits. Preble's mouse was found above and below project location, but project location was subject to deep erosion and was not suitable habitat anymore. Restoration proposal was to erect nine check dams to raise the water levels to its original position. Vegetation reestablished on its own in response to the water manipulations. In addition, revegetation programs were undertaken. The mouse has moved into the project location.
How were multiple species issues addressed?	Not applicable.
What is the service area for the bank?	CDOT projects in Douglas County that will impact Preble's meadow jumping mouse.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See Colorado Department of Transportation et al., 2003.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	1 acre of permanent impact requires 1.5 credits for compensation. Temporary impacts require 1 encumbered credit for 1 acre of disturbance in the primary service area and 2 encumbered credits for 1 acre of disturbance in the secondary service area. When temporary impacts have been restored appropriately, the encumbered credits will be made available to the bank again.
Can different species be "traded off" for debits vs. credits?	Not applicable — bank is for one species only.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	
Who used credits?	Internal use by CDOT.
Total number of transactions?	Not available.

East Plum Creek Conservation Bank

Information categories	Responses
Average size	Not available.
Average price or change in price over time	No price.
<i>History/status of bank</i>	
Current status	Active
Who owns bank?	Colorado Department of Transportation
Has ownership changed – If so, why?	No.
Who can use the bank?	Colorado Department of Transportation
Establishment date	17-Apr-03
Date first credit used	2003
<i>Management and operation</i>	
Who manages the habitat?	CDOT
Who markets the credits?	No marketing — internal use.
Who owns the land?	CDOT
What types of management activities take place?	Weed control, maintenance of check dams, protection of site from unauthorized uses.
Did active management for restoration need to take place to gain credits?	Yes — Preble's mouse was found above and below project location, but project location was subject to deep erosion and wasn't suitable habitat anymore. Proposal was to erect 9 check dams, to raise water levels and restore hydrology. Vegetation reestablished on its own and in addition, revegetation programs were undertaken. The mouse has moved into the project location.
What are long-term management arrangements?	CDOT agreed to manage land in perpetuity.
What is planned lifespan of bank?	Credits are anticipated to be available to mitigate for 8-20 years of road construction projects.
What types of monitoring take place to ensure bank "performance"?	Annual monitoring reports are required by the USFWS. To receive certification for all conservation credits, the bank must demonstrate that it has achieved very specific success criteria, including depth-to-water, foliar cover, shrub cover, and appropriate population densities of Preble's mice.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	At least annually.
Are there provisions for monitoring to trigger remedial actions?	If monitoring determines that success criteria have not been reached, conservation credits will not be released.

East Plum Creek Conservation Bank

Information categories	Responses
Can monitoring reports be obtained?	Not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Three bridge projects were proposed that would cross East Plum Creek. Establishment of bank was seen as cheaper than case-by-case mitigation, and also would provide an opportunity to create a larger habitat area.
Issues at startup	General criteria were agreed to orally, which allowed bridge construction to proceed. The formal agreement followed later.
Difficulty in marketing credits	Not applicable.
Issues with current regulations	Piecemeal mitigation does not make sense for CDOT. They prefer a banking approach instead of small case-by-case mitigation projects.
Is bank a success?	Yes — this has simplified CDOT's need for mitigation and successfully created habitat for the Preble's mouse.
Do they know of any banks that were started and failed – If so, why?	No.
<i>Relevant permits</i>	Incidental Take Application Permit E TE-017353.
<i>Other notes</i>	In addition to the conservation bank, CDOT undertakes on-site and off-site measures to mitigate impacts to the Preble's meadow jumping mouse, including working during the mouse's hibernation period.

Fitzgerald Ranch Conservation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	Dave Mills
Interview date	10/1/03 with Marden Wilbur
<i>Bank name</i>	Fitzgerald Ranch Conservation Bank
<i>Location</i>	
Address	26115 East Highway 88
City	Clements,
State	CA (95227)
County/location	San Joaquin
<i>Contact for information</i>	
Name	Marden Wilbur
Phone	209 483 0030
E-mail	lnranch@inreach.com
Organization	Lane Family Partnership Trust #1
Title/role	ranch/conservation bank owner and operator
<i>Additional contact, if any</i>	
Name	Susan Hill
Phone	916 414 6494
E-mail	susan_hill@fws.gov
Organization	U.S. Fish and Wildlife Service
Title/role	
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/san_joaquin.shtml
URL#2	http://sacramento.fws.gov/es/bank_list.htm
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	Approximately 37 acres.
No. of acres of buffer areas, if any	Existing ranch property is 803 acres, including the 37 acres in the conservation bank. The remainder of the ranch currently acts as buffer habitat, but these buffers are not protected by conservation easements and may not exist in perpetuity.
No. of credits in bank	62 credits were initially allocated to the bank for sale at the signing of the banking agreement with USFWS.
No. of credits used or sold to date	11 (as of 10/3/03)
<i>Species/habitats/credits available</i>	
	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	California tiger salamander (FE), western spadefoot toad (not listed state or federal)
Birds	
Fish	
Invertebrates	Vernal pool fairy shrimp (FT)

Fitzgerald Ranch Conservation Bank

Information categories	Responses
Mammals	
Plants	Legenere (<i>Legenere limosa</i>) (not listed)
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Initial credit allocation was based on a combination of species abundance and existing acres of suitable habitat for the listed species. Each credit equals approximately 1.7 acres.
What was the method used for defining and measuring credits?	The bank was initially established with 62 available credits, based on species abundance and acres of suitable habitat. There is an opportunity for more credits to become available if monitoring shows an increase in species abundance within the initial 37 acres of habitat where the species were concentrated. However, a decline in species abundance below initial levels would not result in a reduction in the bank's credit allowance.
How were multiple species issues addressed?	Credits are nonoverlapping because all credits are based on a conversion from acres. For example, if a developer needs to offset 2 acres of California tiger salamander impacts, this would require 3.45 credits purchased at the bank. The credits used up by a purchase cannot be used again for a different species. Effectively, this creates credits that are non-overlapping by species and that are available for a single use only.
What is the service area for the bank?	Credits from the bank are approved for use in a multi-county area (e.g., Amador, El Dorado, Merced, San Joaquin, Stanislaus, Tuolumne) and can, with approval from USFWS, be applied on a case-by-case basis as an offset for impacts out of the originally defined service area.
Can we get the Conservation Banking Agreement?	We did not obtain the agreement.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments that could use credits from this bank are made with USFWS staff. Credit purchase is currently scaled to debits on a per-acre basis after multiplying by an adjustment factor of 1.726. For example if USFWS tells a developer the habitat debit they need to offset for impacts to California tiger salamanders is 2 acres the number of credits that need to be purchased is actually 3.45 from $2 * 1.726$.
Can different species be "traded off" for debits vs. credits?	No.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	

Fitzgerald Ranch Conservation Bank

Information categories	Responses
Who used credits?	Credits are available to both public and private parties. Credit transactions that have been completed to date have been primarily with private developers but a significant transaction is in the process of being completed to provide CalTrans with mitigation credits.
Total number of transactions?	Not available.
Average size	Not available.
Average price or change in price over time	Average price of \$65,000 per credit was provided.
<i>History/status of bank</i>	
Current status	Active
Who owns bank?	The bank is owned by the Lane Family Partnership Trust #1. The trust was established by the owners of the ranch property which includes the conservation bank.
Has ownership changed – If so, why?	No.
Who can use the bank?	Bank credits are available to any interested party (i.e., no public or private organization restrictions).
Establishment date	December 1999.
Date first credit used	First credits sold early in 2003.
<i>Management and operation</i>	
Who manages the habitat?	Current bank credits are based on the preservation of existing habitat so no direct management actions are being taken. Annual monitoring of the lands for species presence and abundance is subcontracted to a company named LSA Biological that corresponds directly with the USFWS staff overseeing the bank (Susan Hill).
Who markets the credits?	Credits are marketed by the bank owners and indirectly by USFWS if asked about availability of credits in the area.
Who owns the land?	The Lane Family Partnership Trust #1 owns the land for the bank.
What types of management activities take place?	No active management beyond monitoring currently being undertaken.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	Conservation easements are designed to preserve existing habitat. It is unclear if an endowment for long-term management or monitoring exists.
What is planned lifespan of bank?	Will operate until current available credits are completely sold.

Fitzgerald Ranch Conservation Bank

Information categories	Responses
What types of monitoring take place to ensure bank “performance”?	Annual monitoring, at least, to evaluate species abundance in the bank.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	At least annually.
Are there provisions for monitoring to trigger remedial actions?	No specific triggers for remedial action were identified.
Can monitoring reports be obtained?	Monitoring reports were not obtained.
<i>Subjective appraisals</i>	
Impetus to start bank	Bank reflects the most viable option to realize full value of the property. Initial evaluation of land concluded that land had limited development potential beyond use as a conservation bank. Appeal of conservation banking lay in its ability to allow current ranching activities to continue without additional restriction while potentially providing an additional income stream.
Issues at startup	Frustration at interactions with USFWS in establishing the bank expressed by bank owner as “Think in 30 day increments act in 60 day increments.”
Difficulty in marketing credits	Delay in sale of credits following bank establishment reflects complications in ability to market credits, given delays in finalizing agreements with USFWS.
Issues with current regulations	None expressed beyond continued frustration in dealing with regulators in general.
Is bank a success?	From an economic standpoint, the delay in sale of credits initially was frustrating and cast doubt on the viability of the bank as an investment mechanism. Recent sales of credits provide additional hope that full value will be realized. Ecologically, bank has preserved high quality habitat for threatened and endangered species so is a success in that regard.
Do they know of any banks that were started and failed – If so, why?	No.
<i>Relevant permits</i>	
<i>Other notes</i>	There is the potential for expansion of the bank to offer additional credits from additional habitat if restoration actions are taken. It has not yet been decided whether this opportunity will be pursued while there are still credits available in the current phase of the bank.

Hickory Pass Ranch Conservation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		David Mills
Interview date		10/8/2003
<i>Bank name</i>		Hickory Pass Ranch Conservation Bank
<i>Location</i>		Mailing address: 1803 Brookhaven Drive, Austin, Texas 78704
Address		13001 RR 1174
City		Bertram
State		TX
County/location		Burnet/Travis
<i>Contact for information</i>		
Name		David Johnston
Phone		512 472 4542
E-mail		hickorypass@hotmail.com
Organization		Hickory Pass, L.P.
Title/role		General partner/manager of Hickory Pass Ranch Conservation Bank
<i>Additional contact, if any</i>		
Name		Sybil Vosler (contact for copies of the banking agreement and monitoring reports)
Phone		512 490 0057
E-mail		sybil_vosler@fws.gov
Organization		U.S. Fish and Wildlife Service — Region 2
Title/role		Ecological Services Staff
<i>URLs with information</i>		
URL#1		http://news.fws.gov/NewsReleases/R2/BC6C6868-4DDC-4892-BC6B96EDA824DB4A.html
URL#2		http://www.williamson-county.org/agenda/minutes/m050702.htm
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		Ranch is 3,000 acres, all of which could eventually be incorporated into the bank through development of additional phases. Initial phase of the bank covers 500 acres and it appears that a second phase which would cover an additional 250 acres is highly likely in the near term.
No. of acres of buffer areas, if any		No buffer areas currently. Buffer areas are not required because of the quality of the habitat, the bank's location, and the habitat needs of the golden-cheeked warbler.
No. of credits in bank		500 in Phase I.
No. of credits used or sold to date		400 credits sold to date, a number of additional transactions are pending and likely to occur.
<i>Species/habitats/credits available</i>		
		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		Golden-cheeked warbler (FE)
Fish		
Invertebrates		

Hickory Pass Ranch Conservation Bank

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits are indirectly related to the organisms but are available on a per acre basis with 1 credit = 1 acre of bank habitat.
What was the method used for defining and measuring credits?	Credits are measured based on the available acres of “high quality” habitat available in the bank for the golden-cheeked warbler. Quality of the land was determined through initial biological surveys at the Ranch. In addition, there was an a priori assumption that the land was of high quality as the ranch is within the USFWS’ defined habitat acquisition area for golden-cheeked warbler habitat.
How were multiple species issues addressed?	Not an issue in this bank as credits are available only for mitigation of impacts to golden-cheeked warblers and their habitat.
What is the service area for the bank?	Williamson, Burnet, Blanco, and northern Hays counties, TX. Additional impacts from other areas would presumably be addressed on a case by case basis as the bank provides a unique mitigation opportunity in the area.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See Hickory Pass, L.P. and U.S. Fish and Wildlife Service, 2002.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be “traded off” for debits vs. credits?	No.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Credits available to all interested parties. Sales to date have been made to a mix of private developers and public agencies (e.g., Williamson County, the Texas Turnpike Authority).
Total number of transactions?	To date, 400 credits have been sold and several transactions are pending. Total number of transactions was not available.
Average size	One transaction for 109.2 acres for \$546,000 was sold to Williamson County for road mitigation. Other transaction sizes not available.
Average price or change in price over time	Credits currently sell for \$5,000 each.
<i>History/status of bank</i>	
Current status	Active.

Hickory Pass Ranch Conservation Bank

Information categories	Responses
Who owns bank?	Hickory Pass, L.P., a Texas limited partnership
Has ownership changed – If so, why?	No.
Who can use the bank?	Any party requiring mitigation credits within the service area or that has received permission from the USFWS.
Establishment date	May 2002.
Date first credit used	Summer 2002.
<i>Management and operation</i>	
Who manages the habitat?	David Johnston coordinates the actual habitat management but a Technical Advisory Committee has been established to provide input into the management protocols that includes representatives of Environmental Defense, the neighboring National Refuge, Texas A&M staff. Monitoring is overseen by Steve Paulson of the ACI-Group.
Who markets the credits?	David Johnston, general partner.
Who owns the land?	Hickory Pass, L.P.
What types of management activities take place?	Golden-cheeked warblers rely on “mature” habitats so most of the management is geared to a “do no harm” approach. This includes managing existing ranching activities along with other actions such as the capture and removal of invasive/nuisance bird species that prey upon golden-cheeked warblers.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	Owner required to preserve habitat and conservation values in perpetuity, including maintaining fencing to restrict trespassers, managing the deer population, controlling cowbirds, and minimizing fire risks.
What is planned lifespan of bank?	David Johnston will continually evaluate the market for mitigation credits to determine whether to develop additional phases of the bank, as acreage can only be added to the bank in a minimum of 200 acre installments. Ideally, the demand for credits would be sufficient enough to enroll all of the existing ranch acreage into banking agreements.
What types of monitoring take place to ensure bank “performance”?	Seasonal bird abundance monitoring during the March-August period with emphasis on April and May.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annually at a minimum, check monitoring reports.

Hickory Pass Ranch Conservation Bank

Information categories	Responses
Are there provisions for monitoring to trigger remedial actions?	Not currently but an adaptive management approach is being used with respect to the habitat so the possibility exists that the TAC could recommend remedial actions based on monitoring results.
Can monitoring reports be obtained?	Did not obtain. Reports may be available from Sybil Vosler of the USFWS.
<i>Subjective appraisals</i>	
Impetus to start bank	David Johnston and his wife desired to keep the ranchlands free of development as the lands have been in Mrs. Johnston's family for some time. Conservation banking was seen as a way to realize an income stream from these lands that satisfied the goal of avoiding development while providing a greater return than would be available through a simple appraisal-based sale of the land to the USFWS.
Issues at startup	No significant issues. Some delay with the agreement taking roughly a year and a half to be realized but the bank was the first of its kind in the region and there was a need to process the monitoring results before reaching a final agreement. In all, Mr. Johnston has been extremely pleased by the support and assistance he has received from USFWS regarding the development and management of the bank.
Difficulty in marketing credits	No. Neighboring Williamson County is one of the fastest growing counties in the nation so the development has created a substantial need for mitigation credits.
Issues with current regulations	None.
Is bank a success?	Yes according to owner. Has achieved their desired land preservation and economic goals while increasing the protected acreage for a listed species within a defined habitat acquisition area for the species.
Do they know of any banks that were started and failed – If so, why?	No.
<i>Relevant permits</i>	
<i>Other notes</i>	
	This bank should be seen as an example of the classic convergence of interests that can make for a successful conservation and mitigation bank where existing landowners want to preserve their habitat in an area facing development pressure but also would like to or need to realize some sort of market return for that decision. Both of these needs can be realized by a conservation/mitigation bank and, in areas with significant development pressures, the economic returns may prove larger via the sale of mitigation credits than through more traditional means such as market appraisal-based sales to resource agencies.
<i>Review notes</i>	This version reviewed by David Johnston and sent to Stratus Consulting 10/23/03.

Kern Water Bank — Conservation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	Diana Lane
Interview date	Oct. 10, 2003
<i>Bank name</i>	Kern Water Bank — Conservation Bank
<i>Location</i>	
Address	SW of Bakersfield; Taft Highway
City	Bakersfield
State	CA
County/location	Kern
<i>Contact for information</i>	
Name	Cheryl Harding
Phone	Phone: (661) 399-8735; Fax: (661) 399-9751
E-mail	charding@kwb.org
Organization	Kern Water Board Authority
Title/role	Administrator
<i>Additional contact, if any</i>	
Name	
Phone	
E-mail	
Organization	
Title/role	
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/kern.shtml
URL#2	
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	3,267 acres.
No. of acres of buffer areas, if any	20,000 acres in the total parcel for groundwater recharge.
No. of credits in bank	3,267 credits.
No. of credits used or sold to date	598 credits.
<i>Species/habitats/credits available</i>	
	C = California threatened species; FE = federally endangered; FT = federally threatened Incidental take permits covers: 17 listed species (see below); 28 rare but unlisted species; and 116 species which may become rare over the life of the permit.
Amphibians	
Birds	American peregrine falcon; Aleutian Canada goose (both birds have been delisted and are classified as recently recovered).
Fish	

Kern Water Bank — Conservation Bank

Information categories	Responses
Invertebrates	Valley elderberry longhorn beetle (FT); vernal pool fairy shrimp (FT); conservancy fairy shrimp (FE); vernal pool tadpole shrimp (FE); longhorn fairy shrimp (FE)
Mammals	San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat (all FE)
Plants	San Joaquin woolly-threads (FE); Hoover's woolly-star (delisted, was FT); California jewel flower (FE); Kern mallow (FE); Bakersfield cactus (FE)
Reptiles	blunt-nosed leopard lizard (FE); giant garter snake (FT, C)
Habitat types	Upland habitats
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 acre = 1 credit.
What was the method used for defining and measuring credits?	HCP negotiated over a year of intensive negotiations. The value of the land, the value of the habitat, and how best to use the property all factored into credit assignment of 3,267 acres.
How were multiple species issues addressed?	All species included within habitat credits.
What is the service area for the bank?	http://sacramento.fws.gov/es/Banks/kern_water_bank_service.pdf
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See U.S. Fish & Wildlife Service et al., 1997
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	
Can different species be "traded off" for debits vs. credits?	Impacts to all species mitigated with the same credits.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	See Table 3 in main body of report.
Who used credits?	Agencies, private parties, corporations.
Total number of transactions?	6-10 per year.
Average size	Most sales — 3-5 acres.
Average price or change in price over time	The price is \$2,000 for each credit purchased. In addition, there is a \$5,000 administrative fee per transaction (regardless of number of credits) that goes to the bank. The bank also collects \$375 for the Department of Fish and Game per transaction.
<i>History/status of bank</i>	
Current status	Active
Who owns bank?	Kern Water Bank Authority

Kern Water Bank — Conservation Bank

Information categories	Responses
Has ownership changed – If so, why?	No.
Who can use the bank?	USFWS would prefer that credits be sold to small developers and private landowners; agency sales and large developer sales have also occurred.
Establishment date	October 1997.
Date first credit used	Early 1998.
<i>Management and operation</i>	
Who manages the habitat?	Kern Water Bank Authority
Who markets the credits?	Kern Water Bank Authority
Who owns the land?	Kern Water Bank Authority
What types of management activities take place?	Monitor exotic species and state highway rights-of-way that traverse property. Cattle grazing is used to control tumbleweed. There are security issues at the bank with poaching and unauthorized use of all-terrain vehicles. The bank maintains fencing and locked gates to deal with security issues.
Did active management for restoration need to take place to gain credits?	Habitat was in good condition when land was purchased. The land had been owned by a few owners and had been heavily used for mineral production but very little farming had occurred. There was little surface disturbance. The oil-field structures still exist at the bank, but are not in use.
What are long-term management arrangements?	Continued management by Kern Water Bank Authority.
What is planned lifespan of bank?	75 year permit.
What types of monitoring take place to ensure bank “performance”?	The bank prepares annual monitoring reports. Monitoring requirements specified in the conservation banking agreement have already been fulfilled. The bank has conducted spot-lighting surveys for kit foxes and surveys for blunt-nosed leopard lizards (none were found). Some live trapping occurs as well.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annual monitoring reports include GIS tracking of wildlife sightings.
Are there provisions for monitoring to trigger remedial actions?	Adaptive management — expectation to adapt management if a species was disturbed; no specific remedial actions or triggers were specified in the conservation banking agreement.
Can monitoring reports be obtained?	Monitoring reports can be reviewed in the office. They are very large reports with expensive color copies.

Kern Water Bank — Conservation Bank

Information categories	Responses
<i>Subjective appraisals</i>	
Impetus to start bank	Kern Water Bank Authority gained control of the land from the California Department of Water Resources for groundwater banking and recovery, following the “Monterey Agreement” in 1994. They needed to get a habitat conservation plan (HCP) approved to do the groundwater banking, out of those negotiations came the development of the conservation bank.
Issues at startup	HCP intensely negotiated for 1 year.
Difficulty in marketing credits	No effort to market credits. Kern County was working on a master mitigation project (Valley Floor HCP) which would allow for fee-based mitigation, but this hasn’t worked out yet. Currently, the Kern Water Bank credits are the only ones available, so there is a reasonably strong demand for credits especially by small developers, and a limited supply.
Issues with current regulations	The bank is aware that the USFWS offices have to respond to a shifting legislative environment and pressures, which affects how permits (like incidental take permits) are granted.
Is bank a success?	Successful for Kern Water Bank Authority, but it would not be successful if full economic cost of land was dependent on credit sales. The bank is successful for the agencies because the land is being conserved and managed in an appropriate fashion.
Do they know of any banks that were started and failed – If so, why?	(Didn’t ask)
<i>Relevant permits</i>	Incidental Take Permit Number 828086.
<i>Review notes</i>	

Kimball Island Conservation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Mills, Diana Lane
Interview date	26-Nov-03
<i>Bank name</i>	Kimball Island Conservation Bank
<i>Location</i>	
Address	Located near the confluence of the Sacramento and San Joaquin rivers, below lower Sherman island
City	
State	CA
County/location	Sacramento
<i>Contact for information</i>	
Name	Kellie Berry
Phone	916 331 8810
E-mail	kberry@wildlandsinc.com
Organization	Wildlands Inc.
Title/role	
<i>Additional contact, if any</i>	
Name	Steve Morgan
Phone	916 331 8810
E-mail	smorgan@wildlandsinc.com
Organization	Wildlands Inc.
Title/role	CEO/CFO of Wildlands, Inc.
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/sacramento.shtml
URL#2	http://sacramento.fws.gov/es/bank_list.htm
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	109 acres.
No. of acres of buffer areas, if any	Not formally defined as buffer areas.
No. of credits in bank	Separate credits for each habitat type: 35,000 linear feet of shaded riverine aquatic habitat; 12 credits (acres) of riparian habitat; 75 credits (acres) of shallow-water marsh. Note that mitigation for endangered fish species is accomplished with shallow-water marsh habitat.
No. of credits used or sold to date	Shaded riverine aquatic habitat and riparian habitat credits have been sold out; 38 credits of shallow-water marsh habitat have been sold (37 credits are remaining).
<i>Species/habitats/credits available</i>	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	

Kimball Island Conservation Bank

Information categories	Responses
Fish	Delta smelt (FT), Sacramento splittail (not federally listed), chinook salmon (FE, FT), steelhead (FE, FT).
Invertebrates	
Mammals	
Plants	
Reptiles	
Habitat types	Shaded riverine aquatic, riparian, shallow-water marsh
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits defined in terms of acres or linear feet of habitat.
What was the method used for defining and measuring credits?	Credits were based on habitat creation for three different habitat types (shaded riverine aquatic, riparian, shallow-water marsh). The project design and the credits were defined in advance in coordination with USFWS during the planning stage of the project. There is a chance that the final number of credits could vary if the “as-built” design varied slightly from the plans.
How were multiple species issues addressed?	All of the fish species need the same habitat for refuge (shallow-water marsh), so credits are defined on a habitat basis.
What is the service area for the bank?	Alameda, Contra Costa, San Joaquin, Solano, and Yolo counties — see map included in supplemental materials.
Can we get the Conservation Banking Agreement?	Wildlands prefers not to distribute their Conservation Banking Agreements to the public because they contain information that could be helpful to competitors. They acknowledge that the documents are available from USFWS (through a FOIA request, if necessary).
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments are made by USFWS. In general, parties need to mitigate at a 3:1 ratio for impacts to shallow-water marsh habitat (for example, a 1 acre disturbance requires purchase of 3 credits).
Can different species be “traded off” for debits vs. credits?	No. Debit assessments are made for each of the habitat types available at the bank — a debit for a particular habitat type requires mitigation for that same habitat type.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Public agencies and private individuals.
Total number of transactions?	63 transactions as of November 26, 2003.
Average size	The shaded riverine aquatic and riparian habitat credits were primarily used up by large government projects; most sales of the shallow-water marsh habitat have been less than 1 acre, with a minimum size of 0.02 acres.

Kimball Island Conservation Bank

Information categories	Responses
Average price or change in price over time	Shallow-water marsh habitat is currently \$25,000 per credit; shaded riverine aquatic and riparian habitats have been sold out for a long time, so current price data is not available.
<i>History/status of bank</i>	
Current status	Active for shallow-water marsh; sold-out for shaded riverine aquatic and riparian habitat.
Who owns bank?	Wildlands Inc.
Has ownership changed – If so, why?	No.
Who can use the bank?	Public agencies and private individuals (anyone who needs credits and can pay the fee).
Establishment date	1998
Date first credit used	Fall 1998
<i>Management and operation</i>	
Who manages the habitat?	Wildlands Inc.
Who markets the credits?	Wildlands Inc.
Who owns the land?	Wildlands Inc.
What types of management activities take place?	On-going management is focused on preventing vandalism and unauthorized use of property. Illegal “squatting,” marijuana cultivation, and construction of drug laboratories have all occurred in nearby locations. Wildlands, Inc. has a local caretaker who is on the property daily to prevent illegal uses. In addition, invasive water hyacinth is removed from the property. Wildlands expects the water hyacinth problem will require more aggressive management in the future as the plant becomes more pervasive in the region.
Did active management for restoration need to take place to gain credits?	All of the habitats on the island are the result of active restoration. Wildlands created channels of various sizes on an existing island, to restore the shallow-water marsh habitat needed by endangered fish species. Shaded riverine aquatic and riparian habitat also were created through construction of berms and revegetation with native species.
What are long-term management arrangements?	After the bank is closed, Wildlands will have the right to turn over management to an approved third party and to request funds from the state endowment fund for monitoring and maintenance. (Each credit that is purchased requires payment of a fee to the endowment fund). Currently, Wildlands retains management control over all the banks that it has developed.
What is planned lifespan of bank?	Agreements require maintaining habitat in perpetuity.

Kimball Island Conservation Bank

Information categories	Responses
What types of monitoring take place to ensure bank “performance”?	Fish monitoring and habitat monitoring.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annually.
Are there provisions for monitoring to trigger remedial actions?	Adaptive management plans are included as part of the management agreement. There are no specific triggers for additional remedial work. The USFWS needed to approve the “as-built” plans, however, before credits could be sold.
Can monitoring reports be obtained?	Wildlands prefers not to make the reports public.
<i>Subjective appraisals</i>	
Impetus to start bank	In 1996, the Army Corps of Engineers (ACOE) and the USFWS were looking for another mitigation bank to mitigate different kinds of habitat impacts that were occurring, including levee work, work done by reclamation districts, and impacts from boat-dock construction. The agencies approached Wildlands to see if they were interested in establishing a bank in this area.
Issues at startup	The bank is governed by an ACOE nationwide Section 27 permit for stream and wetland restoration activities (see U.S. ACOE, 2002 in supplemental materials for a description of Section 27 permits). Wildlands had to make sure that the project complied with permit conditions. In addition, there are always different kinds of issues at start-up: land purchase, permitting, design, construction, etc.
Difficulty in marketing credits	No. Wildlands has sold all the credits for two of the habitat types and half the credits for the remaining habitat type within 5 years.
Issues with current regulations	Wildlands is careful to make sure of agency support in advance of creating a bank, and has good relations with relevant agencies. If a regional habitat conservation plan (that provides for fee-based mitigation) is close to adoption for an area, Wildlands would likely choose not to develop a bank because of the risk that the market for credits would disappear.
Is bank a success?	Wildlands considers all of their banks to be successful.
Do they know of any banks that were started and failed – If so, why?	They know of banks that other individuals or companies have tried to establish, but have been unable to find clients.
<i>Relevant permits</i>	

Kimball Island Conservation Bank

Information categories	Responses
<i>Other notes</i>	According to Ellison and Daily (2003), Wildlands invested \$2,000,000 to make a small island (formerly covered with fallow hay fields) into habitat hospitable to endangered delta smelt and steelhead trout. The firm dug 5 miles of meandering channels and planted native sycamores and willows. The firm has earned more than \$9,000,000 selling credits in the bank. (copy of article is included with supplemental materials).

Mobile County Gopher Tortoise Conservation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Chapman
Interview date	10/10/2003 (site visit with Bruce Porter, USFWS)
<i>Bank name</i>	Mobile County Gopher Tortoise Conservation Bank
<i>Location</i>	
Address	No exact address for bank
City	
State	AL
County/location	Mobile
<i>Contact for information</i>	
Name	Bruce Porter
Phone	251 441 5864
E-mail	bruce_porter@fws.gov
Organization	USFWS, Daphne, AL field office
Title/role	Fish & Wildlife Biologist
<i>Additional contact, if any</i>	
Name	Sally Berry
Phone	(251) 694-3158
E-mail	
Organization	Mobile Area Water and Sewer Board
Title/role	
<i>URLs with information</i>	
URL#1	http://southeast.fws.gov/news/2001/r01-039.html
URL#2	
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	222 acres (205 acres are suitable habitat); 1,200 additional acres are expected to be added to the bank in 2006.
No. of acres of buffer areas, if any	6,000 acres (not formally in bank).
No. of credits in bank	128 total credits: 125 credits are available to public, 3 credits are reserved for potential take of 3 tortoises resulting from mitigation activities on-site.
No. of credits used or sold to date	61 credits, as of November 2003.
<i>Species/habitats/credits available</i>	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	
Fish	
Invertebrates	
Mammals	
Plants	

Mobile County Gopher Tortoise Conservation Bank

Information categories	Responses
Reptiles	Gopher tortoise (FT).
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Organism (credits defined per tortoise).
What was the method used for defining and measuring credits?	Exact area required for each tortoise credit was based on a study that determined the size of necessary habitat and the home range of tortoises. Area needed is about 1.2 acres for each individual tortoise. Banking agreement used an 80% capacity to allow for some natural increase in population to get to 1.5 acres/individual. In addition, the baseline tortoise population at the site was estimated to be 15 individuals.
How were multiple species issues addressed?	Not formally addressed, however habitat is good also for woodpeckers and if a pair were available for transplant, it is likely that they would put them on the property.
What is the service area for the bank?	Mobile County, AL — but only available to people hooking up septic tanks within the Mobile Area Water and Sewer System service area.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See Board of Water and Sewer commissioners of the City of Mobile, no date.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit is determined on the basis of individual tortoises impacted by septic tank installation. If tortoise burrows are found during a septic tank installation permit request, then mitigation is required. If an actual tortoise is found, it can be relocated to the bank. USFWS does the actual identification and relocation of tortoises.
Can different species be “traded off” for debits vs. credits?	No.
<i>Credit transaction history</i>	See Table 4 in main body of report.
<i>If individual transaction data not available</i>	
Who used credits?	Individuals or developers that need to install septic tanks on property.
Total number of transactions?	18 transactions.
Average size	3-4 tortoises
Average price or change in price over time	\$3,500 per individual.
<i>History/status of bank</i>	
Current status	Active.
Who owns bank?	Board of Water and Sewer Commissioners of Mobile, AL.
Has ownership changed – If so, why?	No.

Mobile County Gopher Tortoise Conservation Bank

Information categories	Responses
Who can use the bank?	Individuals in Mobile Area Water and Sewer Service Area who need to install a septic system.
Establishment date	June 2001.
Date first credit used	2001.
<i>Management and operation</i>	
Who manages the habitat?	Habitat is managed by Southeastern Natural Resources, Inc.
Who markets the credits?	Mobile Area Water and Sewer System
Who owns the land?	Mobile Area Water and Sewer System
What types of management activities take place?	Underbrush clearing, timber harvesting, controlled burns, control of exotic species (e.g., cogongrass) to maintain open-canopy longleaf pine forest.
Did active management for restoration need to take place to gain credits?	Before establishing the bank, management was needed to “restore more open, longleaf-pine canopy conditions, reduce hardwood encroachment, reduce invasive exotic species, and restore more natural fire regimes.” (Board of Water and Sewer Commissioners of the city of Mobile, no date).
What are long-term management arrangements?	Mobile Area Water and Sewer System contracts with Southeastern Natural Resources, Inc. for all management actions and intends to continue this relationship.
What is planned lifespan of bank?	100 years.
What types of monitoring take place to ensure bank “performance”?	Testing of all tortoises for upper respiratory disease before they are placed in bank, radio-telemetry location tracking for first 25 tortoises placed in bank and for the resident tortoises, burrow surveys with GIS location information every two years, annual habitat management assessment.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annual measurements of vegetation characteristics, survey of active and inactive tortoise burrows every two years; intensive radio-telemetry of resident and translocated tortoises during first two years.
Are there provisions for monitoring to trigger remedial actions?	Scientific Advisory Panel of 4-6 scientists was established to oversee implementation of monitoring program. If fewer than 60% of translocations are successful, the Panel will make binding recommendations to improve translocation success. If the success rate is “especially low,” the Panel and the Service would consider closing the bank to additional landowners. The Panel also will make recommendations for improvement if recruitment is low or exotic species control is not successful.
Can monitoring reports be obtained?	We did not obtain monitoring reports. Bruce Porter at USFWS may be able to provide them.
<i>Subjective appraisals</i>	

Mobile County Gopher Tortoise Conservation Bank

Information categories	Responses
Impetus to start bank	USFWS approached MAWSS to use land as relocation site for affected tortoises.
Issues at startup	None identified.
Difficulty in marketing credits	No. This bank is the only available gopher tortoise bank and is the easiest method for landowners to obtain an incidental take permit for development of property with active tortoise burrows. There are plans to expand the bank by 1,200 acres adjacent to the current bank.
Issues with current regulations	None identified.
Is bank a success?	Yes. Bank provides active management for tortoise habitat. Tortoises on small tracts of private property are threatened by fragmentation and habitat degradation. The bank and USFWS can issue a “certificate of inclusion” to private landowners to be included within the scope of the Section 10(a) Incidental Take Permit issued to the Board of Water and Sewer Commissioners of the City of Mobile, following tortoise relocation and payment of the required fee. This greatly simplifies the process of receiving an incidental take permit for landowners.
Do they know of any banks that were started and failed – If so, why?	No. The Alabama Department of Transportation is working to set up a 600 acre tortoise bank for internal use for road mitigation.
Relevant permits	Incidental Take Permit Number TEO35340-0.
Other notes	Bruce Porter of USFWS has noted two items that he would do differently if they were starting the bank again. First, they publicized the exact location of the bank, which has led to people “dumping” unauthorized tortoises at the bank, with the potential for spreading upper respiratory disease. Second, they accepted credits and translocated tortoises before the habitat restoration was finished, which limited the types of restoration and management actions they could undertake.

Pleasanton Ridge Conservation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Mills
Interview date	10/16/03
<i>Bank name</i>	Pleasanton Ridge Conservation Bank
<i>Location</i>	
Address	n/a
City	Pleasanton
State	CA
County/location	Alameda
<i>Contact for information</i>	
Name	Nancy Wenninger
Phone	510 544 2607
E-mail	nwenninger@ebparks.org
Organization	East Bay Regional Parks District
Title/role	Land Acquisition Manager
<i>Additional contact, if any</i>	
Name	Kevin Peters
Phone	925 245 3600
E-mail	
Organization	Shea Homes
Title/role	
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/alameda.shtml
URL#2	http://sacramento.fws.gov/es/bank_list.htm
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	654.1 acres
No. of acres of buffer areas, if any	Bank is surrounded on three sides by an existing East Bay Regional Park.
No. of credits in bank	Banking agreement established 771.165 credits for California red-legged frog, 9.060 credits for Alameda whipsnake, and between 112.130 and 167.859 "dual species" credits (see section below on credit definition). An additional 130.845 red-legged frog credits are possible if restoration work expands the amount and quality of red-legged frog habitat. Additional credits (undetermined number) may also be available for Alameda whipsnake following restoration work.
No. of credits used or sold to date	To date, 16 whipsnake and 26 red-legged frog credits have been used.
<i>Species/habitats/credits available</i>	
Amphibians	C = California threatened species; FE = federally endangered; FT = federally threatened
Birds	California red-legged frog (FT)

Pleasanton Ridge Conservation Bank

Information categories	Responses
Fish	
Invertebrates	
Mammals	
Plants	
Reptiles	Alameda whipsnake (FT)
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Conservation credits are not based on a defined unit. 1 credit does not equal 1 acre or 1 organism — instead the number of credits were defined based on a combination of species abundance, habitat size, and habitat quality.
What was the method used for defining and measuring credits?	Initial credit allocation was made based on a complex formula that accounted for both species abundance and the quality of the habitat for the species in the bank area. For red-legged frogs, the credits were based on a multiplier of 1.497 (1 acre = 1.497 credits). The formula was developed by Wildlands Inc and is described in the Conservation Banking Agreement (California Department of Fish and Game et al., 1999) provided with supplemental materials.
How were multiple species issues addressed?	The bank credits for the red-legged frog and Alameda whipsnake are separate and non-transferable. However, the bank's initial credit allocation includes a number of "dual species" credits that can be used to mitigate for either species. The exact number of available dual species credits depends on whether they were assigned to Alameda whipsnake or red-legged frog.
What is the service area for the bank?	Alameda, Contra Costa, and Santa Clara counties.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See California Department of Fish and Game et al., 1999.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be "traded off" for debits vs. credits?	No.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	It was not immediately clear who has used the credits because the East Bay Regional Park District is still working its way through the documentation accompanying their recent acquisition of the bank from Shea Homes. It is likely that both public and private parties have purchased credits.
Total number of transactions?	Not known.

Pleasanton Ridge Conservation Bank

Information categories	Responses
Average size	Not known.
Average price or change in price over time	Indirect information on prices suggests credits may have sold in the neighborhood of \$4,000 each, regardless of species. Shea Homes had retained an option to purchase up to 100 credits at \$2,000 per credit, which is believed to be about half the market value.
<i>History/status of bank</i>	
Current status	The East Bay Regional Park District is currently evaluating the bank's status with respect to whether they will sell or retire the remaining credits.
Who owns bank?	The East Bay Regional Park District.
Has ownership changed – If so, why?	The East Bay Regional Park District is the third owner of the bank following its creation in 1999 by the American Land Conservancy. The bank was purchased by Shea Homes from the American Land Conservancy in order to mitigate expected impacts from a nearby Shea Homes development. When the development failed to proceed, Shea Homes looked to sell the bank because the property lacked development potential following the enactment of the conservation easement and Shea Homes lacked both the desire and expertise to manage the property or sell the credits. The sale was executed as a bargain sale to maximize the economic benefit to Shea through the combined sale revenue and tax discounts while minimizing the Park District's expense for the property.
Who can use the bank?	If credits are made available it is anticipated that they would be available to any interested and USFWS-approved party (e.g., public and private entities).
Establishment date	1999
Date first credit used	1999
<i>Management and operation</i>	
Who manages the habitat?	Management responsibilities for the habitat currently reside with and are being undertaken by the East Bay Regional Park District. Originally, Wildlands, Inc. was contracted as the bank manager by the American Land Conservancy.
Who markets the credits?	Credits are not currently for sale while the East Bay Regional Park District evaluates the merits of alternative plans of action with respect to their ownership of the credits and the land.
Who owns the land?	The East Bay Regional Park District
What types of management activities take place?	Current management activities on the bank include implementing predator control practices and managing the location and duration of grazing activities.
Did active management for restoration need to take place to gain credits?	Active management and/or restoration was not needed to gain initial credits but additional credits are available if specific restoration actions are undertaken.

Pleasanton Ridge Conservation Bank

Information categories	Responses
What are long-term management arrangements?	Currently the bank is being managed by the East Bay Regional Park District and a land use plan is being developed now that the District owns an effective contiguous habitat unit.
What is planned lifespan of bank?	This is also an issue currently being addressed by the East Bay Regional Park District as part of their overall evaluation of the bank's future direction. However, the conservation easement on the property associated with the bank is in perpetuity.
What types of monitoring take place to ensure bank "performance"?	There is currently species-specific monitoring for the species providing credits as well as monitoring designed to identify the status of predator species.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Currently there is twice yearly monitoring for the abundance of bullfrogs (which compete with California red-legged frogs) and periodic predator monitoring.
Are there provisions for monitoring to trigger remedial actions?	The banking agreement contains provisions outlining situations that would require remedial action (e.g., in response to overgrazing).
Can monitoring reports be obtained?	Not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Bank was initially developed by the American Land Conservancy to protect important habitat for red-legged frogs and Alameda whipsnake. The subsequent owner, Shea Homes, was motivated to purchase the bank so that it would be adequately prepared to mitigate against expected species impacts in a proposed development project. The failure to initiate the development project motivated the bank's sale to the East Bay Regional Park District which desired the parcel because it was surrounded on three sides by other park property.
Issues at startup	None that the East Bay Park District is aware of.
Difficulty in marketing credits	It is not known how difficult it would be to sell the credits if that option is pursued although the park district has already been contacted by a third party that is potentially interested in buying the bank as an investment opportunity.
Issues with current regulations	None to date.

Pleasanton Ridge Conservation Bank

Information categories	Responses
Is bank a success?	This bank is relatively unusual compared to others in this project as a result of the rapid succession of owners in the four years since the bank was initiated. The varying motivations for the establishment of the bank and the subsequent purchases also complicate evaluating its success. Ecologically, the preservation of the habitat with the conservation easement represents one indication of the bank's success. The limited number of management actions that have been taken (e.g., expanding the extent of cattle exclusion fencing from streambanks) also have likely improved the habitat or prevented declines in its quality both of which can be viewed as ecological successes. Evaluating the economic success of the bank is complicated because of the relatively little effort its current and past owners have devoted to fostering the market for the credits.
Do they know of any banks that were started and failed — If so, why?	No.
<i>Relevant permits</i>	
<i>Review notes</i>	The information in this worksheet is consistent with information sent for review to Nancy Wenninger and the edits that were received from her in a 11/5/03 email.

Pope Ranch Conservation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		David Mills, Diana Lane
Interview date		26-Nov-03
<i>Bank name</i>		Pope Ranch Conservation Bank
<i>Location</i>		
Address		Located West of Clarksburg, and South of I-80
City		
State		CA
County/location		Solano
<i>Contact for information</i>		
Name		Kellie Berry
Phone		916 331 8810
E-mail		kberry@wildlandsinc.com
Organization		Wildlands Inc.
Title/role		
<i>Additional contact, if any</i>		
Name		Steve Morgan
Phone		916 331 8810
E-mail		smorgan@wildlandsinc.com
Organization		Wildlands Inc.
Title/role		CEO/CFO of Wildlands, Inc.
<i>URLs with information</i>		
URL#1		http://sacramento.fws.gov/es/bank_list.htm
URL#2		
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		391 acres
No. of acres of buffer areas, if any		81 acres not suitable for habitat
No. of credits in bank		310 credits
No. of credits used or sold to date		155 credits sold
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		
Fish		
Invertebrates		
Mammals		
Plants		
Reptiles		Giant garter snake (FT)

Pope Ranch Conservation Bank

Information categories	Responses
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 credit = 1 acre of suitable habitat.
What was the method used for defining and measuring credits?	Appropriate habitat was created for the giant garter snake on the land purchased for the bank. The project includes 1/3 aquatic habitat and 2/3 upland habitat, because the snake requires both habitat types in close proximity.
How were multiple species issues addressed?	No multiple species issues.
What is the service area for the bank?	Includes parts of Solano, Yolo, and Sacramento Counties — see service area map.
Can we get the Conservation Banking Agreement?	Wildlands prefers not to distribute their Conservation Banking Agreements to the public because they contain information that could be helpful to competitors. They acknowledge that the documents are available from USFWS (through a FOIA request, if necessary).
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments are made by USFWS. In general, parties need to mitigate at a 2:1 to 3:1 ratio for impacts to giant garter snake habitat.
Can different species be “traded off” for debits vs. credits?	Not applicable because bank only applies to giant garter snake.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Public agencies and private individuals; work on levees can impact giant garter snake habitat.
Total number of transactions?	10
Average size	Transaction size has ranged from 0.05 — 50 credits.
Average price or change in price over time	\$25,000 per acre
<i>History/status of bank</i>	
Current status	Active.
Who owns bank?	Wildlands, Inc.
Has ownership changed – If so, why?	No.
Who can use the bank?	Public agencies and private individuals (anyone who needs credits and can pay the fee).
Establishment date	2001
Date first credit used	2001

Pope Ranch Conservation Bank

Information categories	Responses
<i>Management and operation</i>	
Who manages the habitat?	Wildlands, Inc.
Who markets the credits?	Wildlands, Inc.
Who owns the land?	Wildlands, Inc.
What types of management activities take place?	Some water management in the late fall to bring water to aquatic habitat areas.
Did active management for restoration need to take place to gain credits?	Restoration work was required to create upland habitat areas (mounds).
What are long-term management arrangements?	After the bank is closed, Wildlands will have the right to turn over management to an approved third party and to request funds from the state endowment fund for monitoring and maintenance. (Each credit that is purchased requires payment of a fee to the endowment fund). Currently, Wildlands retains management control over all the banks that it has developed.
What is planned lifespan of bank?	Agreements require maintaining habitat in perpetuity.
What types of monitoring take place to ensure bank "performance"?	Vegetation monitoring and species-specific surveys; the giant garter snake has not yet been sighted at the bank.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annually.
Are there provisions for monitoring to trigger remedial actions?	Adaptive management plans are included as part of the management agreement. There are no specific triggers for additional remedial work.
Can monitoring reports be obtained?	Wildlands prefers not to make the reports public.
<i>Subjective appraisals</i>	
Impetus to start bank	The USFWS approached Wildlands to develop a giant garter snake bank because of the need for mitigation for giant garter snake habitat and the lack of opportunities for mitigation.
Issues at startup	Initially, the local agricultural community was concerned about the development of a conservation bank in the area because of a desire to avoid endangered species issues.
Difficulty in marketing credits	No. This is the only giant garter snake bank in the area.

Pope Ranch Conservation Bank

Information categories	Responses
Issues with current regulations	Wildlands is careful to make sure of agency support in advance of creating a bank, and has good relations with relevant agencies. If a regional habitat conservation plan (that provides for fee-based mitigation) is close to adoption for an area, Wildlands would likely choose not to develop a bank because of the risk that the market for credits would disappear.
Is bank a success?	Wildlands considers all of their banks to be successful.
Do they know of any banks that were started and failed — If so, why?	They know of banks that other individuals or companies have tried to establish, but have been unable to find clients.
<i>Relevant permits</i>	
<i>Review notes</i>	

Red-Cockaded Woodpecker Conservation Bank — Univ. of South Carolina Development Foundation

Information categories	Responses
Background	
Stratus Consulting interviewer	David Mills and Diana Lane
Interview date	10/20/03 for interview with Ralph Costa; 11/13/03 for interview with Lamar Comalander
Bank name	Red-Cockaded Woodpecker Conservation Bank — Univ. of South Carolina Development Foundation
Location	
Address	Located 7 miles northeast of Georgetown, South Carolina
City	
State	South Carolina
County/location	Georgetown
Contact for information	
Name	C. Lamar Comalander
Phone	803 788-0590 (office); 803-920-8775 (cell phone)
E-mail	comalander@millikenforestry.com
Organization	Milliken Forestry
Title/role	Vice President
Additional contact, if any	
Name	Ralph Costa
Phone	864 656 2432
E-mail	ralph_costa@fws.gov
Organization	USFWS
Title/role	Recovery coordinator, red-cockaded woodpecker
URLs with information	
URL#1	http://www.environmentaldefense.org/article.cfm?contentid = 2664
URL#2	http://www.millikenforestry.com/services_environmentalservices.htm
Size of bank	
No. of acres in bank (note if parcel not contiguous)	Approximately 1200 acres preserved.
No. of acres of buffer areas, if any	No formal buffer areas.
No. of credits in bank	1 breeding cluster of red-cockaded woodpeckers above baseline.
No. of credits used or sold to date	1 breeding cluster of red-cockaded woodpeckers.
Species/habitats/credits available	
	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	Red-cockaded woodpecker (FE)
Fish	
Invertebrates	

Red-Cockaded Woodpecker Conservation Bank — Univ. of South Carolina Development Foundation

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Group of red-cockaded woodpecker (“recruitment cluster”) in combination with habitat.
What was the method used for defining and measuring credits?	Need to have one pair of birds stay on their territory for at least one breeding season (minimum 6 months) to receive one credit. To qualify as a bank, the area must support a minimum of 10 groups of woodpeckers with a minimum of 1500 — 2000 acres. Each group needs at least 100 acres. The minimum size of 10 groups was based on demographic models that showed a high probability of woodpecker persistence for 20 years, with a minimum size of 10 groups.
How were multiple species issues addressed?	Not applicable — bank focuses only on red-cockaded woodpecker.
What is the service area for the bank?	For each red-cockaded woodpecker bank authorized by the USFWS, the service area is defined as the recovery unit. There are a total of 12 recovery units, based on ecoregion definitions.
Can we get the Conservation Banking Agreement?	Red-cockaded woodpecker recovery plan available at http://rcwrecovery.fws.gov/finalrecoveryplan.pdf . Excerpt included in supplemental materials, see U.S. Fish and Wildlife Service, 2003.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	The USFWS has a 1:1 mitigation policy — an applicant needs to replace a lost group of birds with a new group of birds (“mitigation”). In addition, the birds on impacted habitat are relocated to a new area (“minimization”).
Can different species be “traded off” for debits vs. credits?	Not applicable.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	1 credit sold to Litchfield Development Corporation for mitigation of a cluster impacted by a golf course development.
Total number of transactions?	1
Average size	Not applicable.
Average price or change in price over time	\$100,000

Red-Cockaded Woodpecker Conservation Bank — Univ. of South Carolina Development Foundation

Information categories	Responses
<i>History/status of bank</i>	
Current status	No additional clusters available for this tract; 6 clusters are available at the Friendfield Plantation and 10 clusters are available at Brosnan Forest (owned by Norfolk Southern Railroad). These properties are all managed by Milliken Forestry. These credits are priced at \$250,000 each and none have been sold.
Who owns bank?	University of South Carolina Development Foundation
Has ownership changed — If so, why?	No.
Who can use the bank?	Any private party.
Establishment date	N/A
Date first credit used	Mitigation completed in 2001
<i>Management and operation</i>	
Who manages the habitat?	Milliken Forestry
Who markets the credits?	Milliken Forestry
Who owns the land?	University of South Carolina Development Foundation
What types of management activities take place?	Forest has an approved habitat management plan which includes prescribed burning and cavity management, including removing flying squirrels from cavities.
Did active management for restoration need to take place to gain credits?	Yes — a new breeding cluster had to be established.
What are long-term management arrangements?	Requires long-term protection of birds and habitat management.
What is planned lifespan of bank?	Indefinite.
What types of monitoring take place to ensure bank “performance”?	Population monitoring and habitat management required.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Not available.
Are there provisions for monitoring to trigger remedial actions?	Monitoring must document success of breeding cluster before credit is approved.

Red-Cockaded Woodpecker Conservation Bank — Univ. of South Carolina Development Foundation

Information categories	Responses
Can monitoring reports be obtained?	Did not address.
<i>Subjective appraisals</i>	
Impetus to start bank	Mitigation banks for red-cockaded woodpeckers are included as part of the recovery plan (USFWS, 2003); requirements for banks are consistent across all properties (individual banking agreements are not issued for each property).
Issues at startup	Did not address
Difficulty in marketing credits	Because of high cost of credits, marketing of additional available credits has been difficult. One potential transaction fell through when an automobile manufacturer chose not to build a new plant in South Carolina. Generally, credits are only sold for large development projects that can afford the mitigation costs.
Issues with current regulations	Did not address.
Is bank a success?	Mitigation banking is a successful method for increasing number of red-cockaded woodpecker breeding cluster. Limited demand for credits makes economic success more difficult.
Do they know of any banks that were started and failed — If so, why?	Did not address.
<i>Relevant permits</i>	
<i>Review notes</i>	

Sedco Hills Conservation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		n/a — template filled out electronically by Leslie Beck of The Environmental Trust
Interview date		Completed template e-mailed to Stratus Consulting (Dave Mills) on 12/2/03.
<i>Bank name</i>		Sedco Hills Conservation Bank
<i>Location</i>		
Address		
City		
State		CA
County/location		Riverside
<i>Contact for information</i>		
Name		Leslie Beck
Phone		619 461 8333
E-mail		lbeck@tet.org
Organization		The Environmental Trust
Title/role		Real Property Coordinator
<i>Additional contact, if any</i>		
Name		California Department of Fish and Game, Bill Tippetts
Phone		U.S. Fish and Wildlife Service, Janet Struckrath (619) 431-9440
E-mail		
Organization		
Title/role		
<i>URLs with information</i>		
URL#1		http://www.sdcounty.ca.gov/dplu/Resource/5~mitbanks/5~mitbnks-index.html
URL#2		
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		180 acres
No. of acres of buffer areas, if any		No buffer areas are specifically incorporated in the bank.
No. of credits in bank		180 credits (1 acre = 1 credit) for a combination of Riversidian sage scrub (148 acres/credits) and Chamise chaparral (31.85 acres/credits), credits are also available for 8 pairs of California gnatcatchers.
No. of credits used or sold to date		148 credits of Riversidian Sage Scrub used; 1.2 credits of Chamise chaparral used; 6 pairs of gnatcatcher credits used.
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		California gnatcatcher (FT)
Fish		
Invertebrates		

Sedco Hills Conservation Bank

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	Riversidian coastal sage scrub, Chamise chaparral
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Acres only for the Riversidian sage scrub or Chamise chaparral, credits for a pair of Gnatcatchers also require supporting acreage (20 acres support 1 pair).
What was the method used for defining and measuring credits?	USFWS defined credits based on habitat acreage. Biological surveys conducted over a couple of years were used by USFWS to determine that six pairs of California gnatcatchers were supported on the site.
How were multiple species issues addressed?	All species on site noted and periodic brief biological surveys are conducted. Credits are tracked separately for Riversidian sage scrub and Chamise chaparral.
What is the service area for the bank?	Western Riverside county
Can we get the Conservation Banking Agreement?	This Conservation Bank Agreement is in its 4th draft and has never been signed by USFWS representatives.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments for impacts to sage scrub, chaparral, or California gnatcatchers are made by the USFWS.
Can different species be "traded off" for debits vs. credits?	No.
<i>Credit transaction history</i>	See Table 5 in main body of report.
<i>If individual transaction data not available</i>	
Who used credits?	Developers with projects in southwestern Riverside County.
Total number of transactions?	Eight.
Average size	21 acres of Riversidian sage scrub.
Average price or change in price over time	Habitat only (no California Gnatcatcher) avg. \$3,950/credit. Credit w/ California Gnatcatcher avg. \$5,300/credit.
<i>History/status of bank</i>	
Current status	Active.
Who owns bank?	The Environmental Trust, Inc.
Has ownership changed – If so, why?	No.
Who can use the bank?	Anyone approved by USFWS.
Establishment date	The Environmental Trust gained title in Sept. 1999. As noted above, conservation banking agreement never signed by USFWS.

Sedco Hills Conservation Bank

Information categories	Responses
Date first credit used	First sale June 2000.
<i>Management and operation</i>	
Who manages the habitat?	The Environmental Trust, Inc.
Who markets the credits?	Environmental Land Solutions
Who owns the land?	The Environmental Trust, Inc.
What types of management activities take place?	Management Plan stipulates regular site visits for mapping, signage, access control; perpetual biological corridor maintenance; annual biological monitoring; and adaptive management strategies dependent on conservation and regulatory agency requirements.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	The Environmental Trust is owner and manager in perpetuity.
What is planned lifespan of bank?	Perpetuity.
What types of monitoring take place to ensure bank “performance”?	The Environmental Trust monitors the biological resources and conducts yearly surveys. USFWS may do independent monitoring.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Four to six times a year.
Are there provisions for monitoring to trigger remedial actions?	Conservation banking agreement and management plan commit The Environmental Trust to monitoring. If changes in habitat or species status occur, The Environmental Trust will obtain advice from USFWS.
Can monitoring reports be obtained?	Not available.
<i>Subjective appraisals</i>	
Impetus to start bank	The Environmental Trust is a nonprofit agency in Riverside County. It was motivated to start the bank to help conserve habitat and protect the California gnatcatcher.
Issues at startup	Protection by use of easements and covenants led to three separate “covenants of conditions and restrictions” to be recorded, two with USFWS, one with Riverside County.

Sedco Hills Conservation Bank

Information categories	Responses
Difficulty in marketing credits	Riverside County, unlike San Diego County, did not have an implemented multiple species habitat conservation plan (MSHCP) until 2003. There are still considerable uncertainties remaining about the implementation of the MSHCP and the role of conservation banks. The USFWS and the County have not always agreed on the implementation and future of mitigation banks.
Issues with current regulations	The Environmental Trust is not aware of current active issues. This is their only bank in Riverside County.
Is bank a success?	In the sense that The Environmental Trust has sold the majority of the resources it is a success. The Tier III habitat remaining will not be selling in the near future which means The Environmental Trust will not be fully endowed for a number of years.
Do they know of any banks that were started and failed – If so, why?	There are other banks in this area which also do not have signed conservation banking agreements. The Environmental Trust would not currently start another bank in Riverside County.
<i>Relevant permits</i>	
<i>Review notes</i>	Template filled out by Leslie Beck of the Environmental Trust, with minor edits by Stratus Consulting.

Sheridan Conservation and Mitigation Bank

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Mills, Diana Lane
Interview date	26-Nov-03
<i>Bank name</i>	Sheridan Conservation and Mitigation Bank
<i>Location</i>	
Address	Southeast of Yuba City
City	
State	CA
County/location	Placer
<i>Contact for information</i>	
Name	Kellie Berry
Phone	916 331 8810
E-mail	kberry@wildlandsinc.com
Organization	Wildlands Inc.
Title/role	
<i>Additional contact, if any</i>	
Name	Steve Morgan
Phone	916 331 8810
E-mail	smorgan@wildlandsinc.com
Organization	Wildlands Inc.
Title/role	CEO/CFO of Wildlands, Inc.
<i>URLs with information</i>	
URL#1	http://sacramento.fws.gov/es/bank_list.htm
URL#2	
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	616 acres
No. of acres of buffer areas, if any	No buffer areas defined as such.
No. of credits in bank	Separate credits for each habitat type: 1,400 units of valley elderberry longhorn beetle credit (1 unit = 1,800 sq. feet of elderberry); 220 credits (acres) of wetlands/marsh; 55 credits (acres) of vernal pools; 30 credits (acres) of riparian habitat.
No. of credits used or sold to date	1,310 elderberry credits sold; 53 vernal pool credits sold; 145 wetland credits sold; 30 riparian credits sold.
<i>Species/habitats/credits available</i>	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	
Fish	
Invertebrates	Valley elderberry longhorn beetle (FT)

Sheridan Conservation and Mitigation Bank

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	Vernal pool creation; wetland/marsh; riparian
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits defined as “units” for valley elderberry longhorn beetle; credits defined in acres for habitats.
What was the method used for defining and measuring credits?	Credits were based on the value of created habitat on a piece of property with poor habitat values.
How were multiple species issues addressed?	Credits are defined on a habitat basis, with impacts to each habitat type requiring mitigation of that same type.
What is the service area for the bank?	Large service area covering multiple counties.
Can we get the Conservation Banking Agreement?	Wildlands prefers not to distribute their Conservation Banking Agreements to the public because they contain information that could be helpful to competitors. They acknowledge that the documents are available from USFWS (through a FOIA request, if necessary).
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments are made by USFWS. In general, parties need to mitigate at a 1:1 to 1.5:1 ratio for impacts to wetland and riparian habitat. Valley elderberry longhorn beetle debits depend on a complicated formula that includes location (riparian vs. non-riparian), size of impact, and evidence of beetle use.
Can different species be “traded off” for debits vs. credits?	No. Debit assessments are made for each of the habitat types available at the bank — a debit for a particular habitat type requires mitigation for that same habitat type.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Public agencies and private individuals.
Total number of transactions?	360 transactions.
Average size	Transaction size has varied from 0.02 acres up to 5-10 acres.
Average price or change in price over time	\$45,000 per acre for seasonal wetlands; \$125,000 per acre for vernal pools; \$1,800 per elderberry unit plus transplant costs, if transplanting of shrubs from impacted site is required.
<i>History/status of bank</i>	
Current status	Active for elderberry credits, vernal pool credits, and wetland credits. All riparian credits have been sold out.
Who owns bank?	Wildlands, Inc.
Has ownership	No.

Sheridan Conservation and Mitigation Bank

Information categories	Responses
changed – If so, why?	
Who can use the bank?	Public agencies and private individuals (anyone who needs credits and can pay the fee).
Establishment date	1995
Date first credit used	1995
<i>Management and operation</i>	
Who manages the habitat?	Wildlands, Inc.
Who markets the credits?	Wildlands, Inc.
Who owns the land?	Wildlands, Inc.
What types of management activities take place?	Management activities are designed to maintain high-quality habitat. The bank can accept transplants of elderberry from impacted areas.
Did active management for restoration need to take place to gain credits?	Yes. All of the habitat at the bank was created from poor-quality fallow land that was no longer used for agriculture.
What are long-term management arrangements?	After the bank is closed, Wildlands will have the right to turn over management to an approved third party and to request funds from the state endowment fund for monitoring and maintenance. (Each credit that is purchased requires payment of a fee to the endowment fund). Currently, Wildlands retains management control over all the banks that it has developed.
What is planned lifespan of bank?	Agreements require maintaining habitat in perpetuity.
What types of monitoring take place to ensure bank “performance”?	Monitoring of vegetation condition and wildlife surveys take place.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annually.
Are there provisions for monitoring to trigger remedial actions?	Adaptive management plans are included as part of the management agreement. There are no specific triggers for additional remedial work.
Can monitoring reports be obtained?	Wildlands prefers not to make the reports public.
<i>Subjective appraisals</i>	

Sheridan Conservation and Mitigation Bank

Information categories	Responses
Impetus to start bank	The founder of Wildlands (Steve Morgan) was aware of mitigation banking in other parts of the country and saw a need for mitigation banking in the Sacramento region. He incorporated the company in 1991. Sheridan was the first mitigation banking project developed by Wildlands.
Issues at startup	This project was the first wetland creation bank in the region and preceded current policy guidance. The USFWS was supportive of the banking idea.
Difficulty in marketing credits	Early marketing efforts were focused on educating the public and agencies about mitigation banking. Currently, Wildlands engages in marketing activities to the development community and to agencies.
Issues with current regulations	Wildlands is careful to make sure of agency support in advance of creating a bank, and has good relations with relevant agencies. If a regional habitat conservation plan (that provides for fee-based mitigation) is close to adoption for an area, Wildlands would likely choose not to develop a bank because of the risk that the market for credits would disappear.
Is bank a success?	Wildlands considers all of their banks to be successful.
Do they know of any banks that were started and failed – If so, why?	They know of banks that other individuals or companies have tried to establish, but have been unable to find clients.
Relevant permits	
Review notes	

Southlands Forest

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		Diana Lane
Interview date		8-Dec-03
<i>Bank name</i>		Southlands Forest
<i>Location</i>		
Address		Southwest Georgia; 35 miles N. of Tallahassee
City		
State		Georgia
County/location		Decatur
<i>Contact for information</i>		
Name		Craig Hedman
Phone		229 246-3642 x 270
E-mail		craig.hedman@ipaper.com
Organization		International Paper, Southlands Forest
Title/role		Manager, Forest Ecology & Water Resources
<i>Additional contact, if any</i>		
Name		Ralph Costa
Phone		864 656 2432
E-mail		ralph_costa@fws.gov
Organization		USFWS
Title/role		Recovery coordinator, red-cockaded woodpecker
<i>URLs with information</i>		
URL#1		http://www.environmentaldefense.org/article.cfm?contentid = 2664
URL#2		http://rcwrecovery.fws.gov/index.htm
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		5300 acres in bank
No. of acres of buffer areas, if any		Forest totals 16,000 acres
No. of credits in bank		12 red-cockaded woodpecker (RCW) groups comprising 47 birds as of December 2003; goal is to establish 25 - 30 RCW groups
No. of credits used or sold to date		3 credits used internally as of December 2003
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		Red-cockaded woodpecker (FE)
Fish		
Invertebrates		
Mammals		
Plants		

Southlands Forest

Information categories	Responses
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	RCW group in combination with habitat
What was the method used for defining and measuring credits?	A credit is gained when a new group is on-site for 6 months plus a breeding season. The number of birds in a group can vary from a single bird to a breeding pair with helper birds. Habitat was surveyed to establish value for target species.
How were multiple species issues addressed?	Not applicable — bank's focus is only on RCW.
What is the service area for the bank?	The service area for 3rd party use of the bank includes the coastal plain of Florida, Georgia, and Alabama. The bank might be eligible to mitigate for takes outside of this area on a case-by-case basis.
Can we get the Conservation Banking Agreement?	We did not obtain the agreement.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	The USFWS has a 1:1 mitigation policy — an applicant needs to replace a lost group of birds with a new group of birds ("mitigation"). In addition, the birds on impacted habitat are relocated to a new area ("minimization"). In addition, mitigation needs to be in-kind. A take of a single bird can be mitigated with establishing a single bird; a take of a pair can be mitigated with establishing a potential breeding pair.
Can different species be "traded off" for debits vs. credits?	Not applicable.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	To date, all credits have been used internally by International Paper.
Total number of transactions?	2 locations with takes (= 2 internal transactions).
Average size	1 group at one locations and 2 groups at the other, a total of 3 groups that required mitigation.
Average price or change in price over time	No price set yet for third party sales. The price will likely be in the range of \$250,000 per credit.
<i>History/status of bank</i>	
Current status	Active
Who owns bank?	International Paper

Southlands Forest

Information categories		Responses
Has ownership changed – If so, why?		International Paper
Who can use the bank?		Internal use by International Paper and third party use is allowed
Establishment date		Incidental Take Permit issued Jan. 29, 1999; kick-off meeting with USFWS, Environmental Defense Fund, and Georgia DNR in March 1996
Date first credit used		2003
<i>Management and operation</i>		
Who manages the habitat?		International Paper
Who markets the credits?		International Paper
Who owns the land?		International Paper
What types of management activities take place?		Prescribed burning; timber management (selection harvests and thinnings); cavity maintenance (most intensive activity); installing artificial cavities; control of some cavity competitors, e.g., rat snakes and flying squirrels
Did active management for restoration need to take place to gain credits?		Yes — new groups need to be established before credits can be earned and subsequently used.
What are long-term management arrangements?		International Paper will actively manage habitat for at least the 30 years of the Habitat Conservation Plan.
What is planned lifespan of bank?		Habitat Conservation Plan is authorized for 30 years.
What types of monitoring take place to ensure bank “performance”?		Intensive monitoring occurs of habitat and bird populations. All red-cockaded woodpeckers on site are banded and marked for monitoring. Other bird species are monitored as well.
<i>Performance monitoring</i>		
How frequently does monitoring occur?		RCWs and cavities are monitored throughout the year.
Are there provisions for monitoring to trigger remedial actions?		Efforts are required to reestablish groups if birds are lost. International Paper intends to maintain RCW groups above baseline as a “cushion” in case groups are lost. The current baseline for International Paper is 18 active clusters; the current inventory of birds is 19-21 groups.
Can monitoring reports be obtained?		Not available.
<i>Subjective appraisals</i>		

Southlands Forest

Information categories	Responses
Impetus to start bank	The idea of banking arose from discussions in an informal setting. International Paper, Environmental Defense Fund, and the USFWS were looking for opportunities for proactive management of endangered species and to promote conservation measures for private landowners. Conservation banking was an idea that all the parties were interested in trying. Since the RCW represented management challenges similar to the northern spotted owl, this species was selected. Having excellent RCW habitat and some birds (3 adult males at the time), Southlands Forest became the most logical place to try implementing a bank.
Issues at startup	Working through the habitat conservation plan and incidental take permit process were the most challenging time-consuming parts of start-up.
Difficulty in marketing credits	No sales to 3rd parties yet, although discussions with 3rd parties have occurred.
Issues with current regulations	Not specifically. International Paper has stayed engaged in the process by being active in regional translocation strategy meetings hosted by USFWS and providing written comments on the recently revised RCW Recovery Plan.
Is bank a success?	Yes — for all parties. USFWS and GA DNR got a positive example of working with private landowners as well as a strategically placed “new” population of RCWs. The habitat and clusters established at Southlands provide an important linkage between two large populations of red-cockaded woodpeckers (Apalachicola National Forest and Red Hills Region of GA/FL). Environmental Defense Fund has seen conservation practices and policies they have championed concretely implemented on-the-ground. For International Paper, the bank increases management flexibility and frees up timber that was encumbered.
Do they know of any banks that were started and failed – If so, why?	Not aware of any.
Relevant permits	Incidental Take Permit Application (PRT-833203)
Review notes	This version reviewed by Craig Hedman, December 9, 2003.

Springtown Natural Communities Reserve

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	Diana Lane
Interview date	12/1/2003
<i>Bank name</i>	Springtown Natural Communities Reserve
<i>Location</i>	
Address	Located near Livermore, CA in an urban area
City	
State	CA
County/location	Alameda
<i>Contact for information</i>	
Name	Terry Huffman
Phone	(415) 925-2000
E-mail	thuffman@h-bgroup.com
Organization	Environmental Mitigation Exchange Company (EMAX) / Huffman-Broadway group
Title/role	Vice-President
<i>Additional contact, if any</i>	
Name	Carl Wilcox
Phone	(707) 944-5525
E-mail	
Organization	California Department of Fish and Game
Title/role	
<i>URLs with information</i>	
URL#1	http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/alameda.shtml
URL#2	
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	52 acres in bank; 31 acres of wetland creation credits.
No. of acres of buffer areas, if any	No formal buffer areas.
No. of credits in bank	520 credits for tiger salamander; 310 credits for wetland creation (1 acre = 10 credits).
No. of credits used or sold to date	0 credits used to date for tiger salamander; approximately 155 wetland credits sold (bank has sold half of the available credits).
<i>Species/habitats/credits available</i>	
	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	California Tiger Salamander (state species of concern)
Birds	
Fish	
Invertebrates	
Mammals	

Springtown Natural Communities Reserve

Information categories	Responses
Plants	
Reptiles	
Habitat types	Seasonal wetlands — creation.
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	10 credits per acre.
What was the method used for defining and measuring credits?	EMAX coordinated with California Department of Fish and Game (CDFG) for development of credits. Credits were defined on an acreage basis. The use of 10 credits per acre makes it easier to keep track of small credit sales (1 credit = 0.1 acres).
How were multiple species issues addressed?	No multiple species issues. The bank includes breeding and upland habitat for the tiger salamander.
What is the service area for the bank?	40-mile radius service area — only wetland bank in county.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See California Department of Fish and Game and EMAX, no date.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	CDFG assesses debit areas and determines the need for mitigation credits. This bank is a “state approved” bank only. It is not a federal conservation bank and cannot be used as mitigation for impacts to federally listed threatened or endangered species.
Can different species be “traded off” for debits vs. credits?	Not applicable.
<i>Credit transaction history</i>	See Table 6 in main body of report.
<i>If individual transaction data not available</i>	
Who used credits?	Private parties and the county transportation authority.
Total number of transactions?	11 transactions.
Average size	Average transaction size is 1/2 acre (5 credits). The largest sale was 14 acres (140 credits).
Average price or change in price over time	Current price for wetland creation credits is 250,000 per acre (25,000 per credit). The price has fluctuated over time in response to changing market conditions. Competitor banks for California tiger salamanders sell salamander credits for 12,000 per acre. Springtown Reserve can’t match that price because of high cost of land in an urban area. Therefore, no price has been set for salamander credits at this bank, because there is no current demand for salamander credits from the Springtown Reserve.
<i>History/status of bank</i>	

Springtown Natural Communities Reserve

Information categories	Responses
Current status	Credits available for wetland creation (half of original credits are remaining). All salamander credits are available, but there is no demand for these credits. EMAX also has an option for purchasing two additional parcels of land to expand bank, but funds for purchase are not available yet.
Who owns bank?	EMAX
Has ownership changed – If so, why?	No.
Who can use the bank?	Private parties and public agencies.
Establishment date	1997
Date first credit used	1997
<i>Management and operation</i>	
Who manages the habitat?	EMAX
Who markets the credits?	EMAX
Who owns the land?	EMAX
What types of management activities take place?	General property maintenance — maintain fencing and signs; remove trash and debris, including illegal dumping; keep out trespassers. Some invasive species removal is done, but this work is minor because of high quality of habitat.
Did active management for restoration need to take place to gain credits?	Yes. Wetland habitat was created on site, including creating two additional breeding ponds for tiger salamanders (one breeding pond already existed on site).
What are long-term management arrangements?	CDFG maintains an endowment fund for long-term management of the property (funded by fees from credit sales). If EMAX goes bankrupt or stops fulfilling its obligation to manage the land, CDFG will gain title to the land and will use the endowment fund for long-term management.
What is planned lifespan of bank?	Land needs to be managed in perpetuity.
What types of monitoring take place to ensure bank “performance”?	Monitoring of vegetation, soils, and hydrology annually for 10 years post-wetland creation to certify that wetland species are present and that the wetland areas meet Army Corps of Engineers criteria.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Annually.
Are there provisions for monitoring to trigger remedial actions?	The banking agreement specifies standards that need to be met. If standards are not met, appropriate remedial actions are required. For example, small-mammal activity damaged a weir structure that then had to be replaced.

Springtown Natural Communities Reserve

Information categories	Responses
Can monitoring reports be obtained?	Not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Impetus to start bank was a discussion between Terry Huffman of EMAX and Carl Wilcox of CDFG. They both had an interest in preserving a federally-listed plant species (bird's beak) in the area. In discussing different ways to try to purchase habitat and conserve it, they decided that a conservation bank would be the best mechanism for protecting existing habitat and creating new wetlands habitat.
Issues at startup	The start-up was challenging because conservation banking was new in the area in 1997, so there were no set documents. Legal issues needed to be overcome. EMAX and CDFG set up a joint escrow account during the wetland construction, until the wetlands were certified by CDFG as successfully built. Also, funding for the bank was difficult. It is difficult to get a loan from a conventional bank for land purchase because conservation banking is seen as having a greater risk than farming or development.
Difficulty in marketing credits	Not too hard to market credits, because this is the only wetland creation bank in the area. At the moment, demand is slow. The bank owner feels that it would be easier to sell credits if the bank were certified as a federal bank, as well as a state bank.
Issues with current regulations	The bank has good relations with local agencies. The bank owner feels that it is helpful to allow advance credit sales, because this helps banks get started where financing is not available. Also, it is important that agencies don't approve competitor banks with large service areas that can take away the market from existing banks.
Is bank a success?	Financially, the bank has been able to break even, but more credit sales will be required to finance the long-term endowment and pay the interest on the land. Ecologically, the bank has been a success for conserving valuable habitat in the area, especially for the federally-listed bird's beak plant.
Do they know of any banks that were started and failed – If so, why?	Not aware of failures. However, the high cost of land in the area prevents people from starting conservation banks.
<i>Relevant permits</i>	

Springtown Natural Communities Reserve

Information categories	Responses
<i>Other notes</i>	<p>Springtown Reserve is an interesting example of how the species credits associated with a bank do not necessarily reflect the full ecological value of a bank. For example, this bank protects a federally-listed plant species (bird's beak), but there are no credits associated with protecting the species because the bank is not federally-certified and because the bank owners felt that there would be no demand for purchasing credits for this species. The bank is certified to provide credits for impacts to California tiger salamanders, but no credits have been sold for this species because of the availability of competitor banks that can sell salamander credits at a lower price.</p>

Stillwater Plains Mitigation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		David Mills
Interview date		12/4/03
<i>Bank name</i>		Stillwater Plains Mitigation Bank
<i>Location</i>		
Address		21923 Dersch Road
City		Anderson
State		CA (zip, 96007)
County/location		Shasta
<i>Contact for information</i>		
Name		Glenn Hawes
Phone		530 365 4233 or 530 365 5078
E-mail		Not used
Organization		Stillwater Plains Mitigation Bank
Title/role		Owner and operator of the bank
<i>Additional contact, if any</i>		
Name		
Phone		
E-mail		
Organization		
Title/role		
<i>URLs with information</i>		
URL#1		http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/shasta.shtml
URL#2		http://sacramento.fws.gov/es/bank_list.htm
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		Bank currently has 260 acres approved and associated with a mix of credits that can be purchased. This 260 acres represents the first of four implementation phases that will be executed (the banking agreement has five phases but the fifth listed phase in the agreement will not be pursued). The second phase should be in place by the fall of 2004 and will cover an additional 400 acres. Ultimately the four phases will encompass roughly 830 acres although there is adjacent land that could be purchased and used to support further extension of the bank.
No. of acres of buffer areas, if any		No buffer acres are specifically defined.
No. of credits in bank		Build out is 100 credits, preservation credits on order 100 for all phases and all species
No. of credits used or sold to date		Exact number of transactions by habitat category not available; also, several transactions are pending (e.g., CalTrans purchase of elderberry unit credits)
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		None
Birds		None

Stillwater Plains Mitigation Bank

Information categories	Responses
Fish	None
Invertebrates	Valley elderberry longhorn beetle (FT) Vernal pool fairy shrimp (FT)
Mammals	None
Plants	Orcutt grass (FE or FT depending on species); Legenere; other species
Reptiles	None
Habitat types	Vernal pool (preservation and creation) Wetlands (have 130 acres enrolled in Federal Wetlands Reserve Program) Emergent marsh, Riparian
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	For habitat, one acre = one credit. For valley elderberry longhorn beetle, one credit = 1,800 square feet (roughly 1/24th of an acre).
What was the method used for defining and measuring credits?	Credits assigned based on areas of different habitat, following restoration work.
How were multiple species issues addressed?	Species specific credits currently available only for mitigating impacts to the valley elderberry longhorn beetle. The only other listed species are mitigated with wetland habitat credits (vernal pool preservation or creation for fairy shrimp). Therefore, there are no overlapping species credit issues.
What is the service area for the bank?	For endangered species credits, the bank's service area is effectively the northern half of California. For the remaining habitat credits (e.g., vernal pools and wetlands) the effective service area is the valley areas of Shasta and Tehama counties. In both cases, the banking team for the bank, composed of staff from USFWS, US ACOE, EPA, and CDFG can evaluate whether a transaction from outside the area should be approved or whether the service area of the bank should be expanded.
Can we get the Conservation Banking Agreement?	We did not receive a copy of the final banking agreement.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments for which credits from this bank could be used to satisfy mitigation requirements are determined by USFWS staff.
Can different species be "traded off" for debits vs. credits?	No, credits are not transferable across species or habitats.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	Private parties and public agencies. A transaction is pending for CalTrans to purchase Elderberry credits.

Stillwater Plains Mitigation Bank

Information categories	Responses
Total number of transactions?	Not available. The fact that Phase II of the project will begin in the fall of 2004, and will place a conservation easement on an additional 400 acres of land suggests that the bank has been active.
Average size	Specifics not given.
Average price or change in price over time	Currently credits are priced on a per acre basis with a distinction for whether the credits are based on habitat creation or preservation. Creation-based credits sell for \$100,000 per acre. Preservation-based credits sell for \$65,000 per acre. Valley elderberry longhorn beetle credits cost approximately \$4250 per credit.
<i>History/status of bank</i>	
Current status	Bank is active with credits available and additional phases planned for implementation.
Who owns bank?	Glenn Hawes
Has ownership changed – If so, why?	No.
Who can use the bank?	Any party with a transaction approved by the USFWS.
Establishment date	Late 2000.
Date first credit used	2000, shortly after opening.
<i>Management and operation</i>	
Who manages the habitat?	Glenn Hawes
Who markets the credits?	Glenn Hawes
Who owns the land?	Glenn Hawes
What types of management activities take place?	Cattle are currently used to graze vegetation that would compete with the listed plant species.
Did active management for restoration need to take place to gain credits?	The bank contains a mix of credits that are associated with habitat preservation and some that are associated with habitat creation (e.g., riparian, vernal pool). The valley elderberry credits are associated with designated parcels suitable for the valley elderberry where bushes that would be lost in development can be transplanted and mixed in with other appropriate native vegetation.
What are long-term management arrangements?	Not available.
What is planned lifespan of bank?	Sale of credits is desired as rapidly as possible. Bank property is in middle of a larger parcel owned by the bank operator and there are no plans to sell the bank or surrounding property.
What types of monitoring take place to ensure bank “performance”?	Details of monitoring not available.

Stillwater Plains Mitigation Bank

Information categories	Responses
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Details of monitoring not available.
Are there provisions for monitoring to trigger remedial actions?	Details of monitoring not available.
Can monitoring reports be obtained?	Details of monitoring not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Owner was initially approached by CDFG following a survey of the local area by researchers from Cal State-Chico that identified the planned bank area as the most suitable area for development of a local habitat conservation and mitigation bank. In addition, the abundance of listed species on the property effectively precluded any alternative development. In this case the conservation-mitigation bank option was viewed as a win-win by the owner as it allowed the character of the ranching land to be retained while allowing for development of an income stream from the property.
Issues at startup	Apparently the process to formalize the bank began in 1995. Despite being approached by CDFG the approval process took five years. However, some of this extended time period can be attributed to the number of species on the property and the need to account for a mix of credits to be provided by preservation and restoration actions.
Difficulty in marketing credits	No difficulties noted.
Issues with current regulations	None mentioned.
Is bank a success?	Bank owner seems enthusiastic about the potential for the bank to be beneficial from a species and habitat management point of view while providing an economic opportunity for a nondestructive development of the property.
Do they know of any banks that were started and failed – If so, why?	Not asked.
<i>Relevant permits</i>	
<i>Review notes</i>	

Swan Road Conservation Bank

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		Diana Lane
Interview date		12-Nov-03
<i>Bank name</i>		Swan Road Conservation Bank
<i>Location</i>		
Address		Section 15 of Township 16 South, Range 14 East; Gila and Salt River Base and Meridian
City		Pima
State		AZ
County/location		Pima County
<i>Contact for information</i>		
Name		Linda Closs
Phone		520-740-6305
E-mail		
Organization		Pima County Public Works Center
Title/role		Manager
<i>Additional contact, if any</i>		
Name		Steve Anderson
Phone		520-877-6000
E-mail		steve.anderson@parks.pima.gov
Organization		Pima County Parks and Recreation
Title/role		
<i>URLs with information</i>		
URL#1		http://www.sahba.org/regaffairs10.htm
URL#2		http://www.pima.gov/pksrec/home2/home2.html
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		592 acres.
No. of acres of buffer areas, if any		77 acres not suitable for cactus.
No. of credits in bank		513 credits.
No. of credits used or sold to date		37 credits used by Pima County for a governmental complex.
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		
Fish		
Invertebrates		
Mammals		
Plants		Pima pineapple cactus (FE)

Swan Road Conservation Bank

Information categories	Responses
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	Credits are based on acres of habitat and are assigned with 1 acre of habitat = 1 credit.
What was the method used for defining and measuring credits?	Habitat acreage suitable for cactus was assigned 1 credit per acre. Transplant of additional cacti onto property would not increase number of available credits. Habitat suitability evaluation was conducted by a contractor for the USFWS. 390 acres of “high suitability” habitat plus 170 acres of “medium suitability” habitat were found, for a total of 560 acres. Subsequently, Pima County chose to reserve a 100 foot corridor along each side of the section for a future road right-of-way, reducing the total suitable acreage to 513 acres.
How were multiple species issues addressed?	Not applicable — Pima pineapple cactus is the only species for this bank.
What is the service area for the bank?	Pima County.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See Pima County and U.S. Fish and Wildlife Service, 2002.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	USFWS assesses value of impacted habitat for the Pima pineapple cactus and determines the amount of off-site mitigation credits required. The conservation banking agreement specifies the maximum ratio of replacement habitat to lost habitat will be 3:1.
Can different species be “traded off” for debits vs. credits?	Not applicable.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	
Who used credits?	Pima County.
Total number of transactions?	1 transaction to date.
Average size	37 credits used.
Average price or change in price over time	No price — credits are used internally by Pima County.
<i>History/status of bank</i>	
Current status	Active.
Who owns bank?	Pima County.

Swan Road Conservation Bank

Information categories		Responses
Has ownership changed – If so, why?	No.	
Who can use the bank?	Only the county can use credits for public works projects.	
Establishment date	Jun-02.	
Date first credit used	Not available.	
<i>Management and operation</i>		
Who manages the habitat?	Pima County.	
Who markets the credits?	No marketing — internal use only.	
Who owns the land?	Pima County.	
What types of management activities take place?	Habitat management specified in conservation banking agreement. Transplant areas are designated to receive Pima pineapple cactus salvaged from other areas. Location of cactus on reserve monitored with GPS coordinates every 3 years. No vehicular access or livestock grazing will be allowed on the property.	
Did active management for restoration need to take place to gain credits?	No restoration required — habitat was in good shape without any widespread infestations of non-native invasive grasses.	
What are long-term management arrangements?	Agreement to maintain conservation easement on property, maintain biological value of lands, and not engage in any property uses that degrade biological values.	
What is planned lifespan of bank?	Indefinite.	
What types of monitoring take place to ensure bank “performance”?	Monitoring plan, specifies monitoring of established and transplanted cacti.	
<i>Performance monitoring</i>		
How frequently does monitoring occur?	Monitoring of established cacti every three years; monitoring of transplanted cacti quarterly for two years.	
Are there provisions for monitoring to trigger remedial actions?	If non-native grass invades the reserve, management actions will be taken to remove the grass.	
Can monitoring reports be obtained?	Not available.	
<i>Subjective appraisals</i>		
Impetus to start bank	Need for mitigation for county projects — purchasing land for off-site mitigation on a case-by-case basis was costly and time-consuming.	

Swan Road Conservation Bank

Information categories	Responses
Issues at startup	The county considered making credits available to the public, but decided to retain all credits for internal use because of the county's needs and because of the perceived difficulty of the legal and financial transactions required to sell credits to the public.
Difficulty in marketing credits	Not applicable.
Issues with current regulations	No.
Is bank a success?	Yes. The county appreciates having mitigation credits available up-front and not needing to buy additional land to mitigate for county projects.
Do they know of any banks that were started and failed – If so, why?	No.
<i>Relevant permits</i>	
<i>Review notes</i>	

Williamson County Karst Conservation Foundation

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Mills
Interview date	10/8/2003
<i>Bank name</i>	Williamson County Karst Conservation Foundation
<i>Location</i>	
Address	Southwest Regional Park, near County Road 175 and New Hope Drive
City	
State	TX
County/location	Williamson
<i>Contact for information</i>	
Name	Steve Paulson
Phone	512 347 9000
E-mail	spaulson@aci-group.net
Organization	ACI-Group
Title/role	Preserve biologist and manager
<i>Additional contact, if any</i>	
Name	Sybil Vosler (contact for copies of the banking agreement and monitoring reports)
Phone	512 490 0057
E-mail	sybil_vosler@fws.gov
Organization	U.S. Fish and Wildlife Service — Region 2
Title/role	Ecological Services Staff
<i>URLs with information</i>	
URL#1	http://www.wilcokarst.org/facts.html
URL#2	
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	220 acres that encompassed 9 karst caves were in the original banking area.
No. of acres of buffer areas, if any	Buffers around cave openings are included in the 220 acres.
No. of credits in bank	A formal number of credits was never defined for the bank. The basis for evaluating debits from impacts to caves and credits from cave preservation is still being established.
No. of credits used or sold to date	The mitigation potential for the 9 karst caves in the original banking area (purchased by the Karst Conservation Foundation) has been completely claimed.
<i>Species/habitats/credits available</i>	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	
Fish	

Williamson County Karst Conservation Foundation

Information categories	Responses
Invertebrates	Bone Cave harvestman (FE), potential for Coffin Cave mold beetle (FE), Tooth Cave ground beetle (FE)
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	The USFWS considers the size of a cave and its known or potential suitability for the listed species when determining the mitigation potential of a cave considered for purchase. Credits are not formally defined.
What was the method used for defining and measuring credits?	There still is no formal basis for evaluating the credit potential of a cave that may be purchased for mitigation with the issue still being addressed on a case-by-case basis, with discussions between developers, the USFWS, and the Williamson County Karst Conservation Foundation.
How were multiple species issues addressed?	Multiple species issues have been dealt with to date by avoiding looking at impact debits and credits on a species specific basis. This in part reflects the lack of available data on the species in the impacted and mitigation caves and relies on an assessment of the potential of the habitats to support these species.
What is the service area for the bank?	21 individual service areas are being defined for Williamson County, because of different micro-environments for the karst species.
Can we get the Conservation Banking Agreement?	Included with supplemental materials. See U.S. Fish and Wildlife Service and Williamson County Karst Conservation Foundation, 2002.
<i>Measurement methods for "debit areas"</i>	
How is "debit area" assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be "traded off" for debits vs. credits?	No.
<i>Credit transaction history</i>	
<i>If individual transaction data not available</i>	
Who used credits?	All of the credits pertaining to the initial group of nine caves (220 acres) were purchased by the Texas Turnpike Authority to mitigate impacts associated with the construction of Texas Road 45. Plans exist to purchase additional karst-fauna areas of 40-70 acres to allow all interested public and private parties to purchase mitigation credits.
Total number of transactions?	Only 1 transaction (to the Texas Turnpike Authority) to date.
Average size	9 caves (220 acres).

Williamson County Karst Conservation Foundation

Information categories	Responses
Average price or change in price over time	No price per credit — parcels needed for mitigation are purchased as funding becomes available.
<i>History/status of bank</i>	
Current status	Credits from protecting the initial group of caves have been fully claimed. Currently, the Williamson County Karst Conservation Foundation is raising money to support “conservation actions” that would help protect or manage karst caves that occur in the area. According to the banking agreement, these conservation actions would then generate conservation credits that could be sold to third parties for impacts to karst areas. The current goal is to finance the purchase of 6 or 7 karst faunal areas that would be roughly 40-70 acres in size. These areas would include karst caves and buffer areas intended to protect the caves’ hydrology which drives the suitability for the listed species.
Who owns bank?	Williamson County Karst Conservation Foundation (a nonprofit organization established by Williamson County).
Has ownership changed – If so, why?	No.
Who can use the bank?	Payments currently collected from private and public parties.
Establishment date	Initial agreement finished in December 2002.
Date first credit used	December 2002.
<i>Management and operation</i>	
Who manages the habitat?	ACI-Group under the direction of Steve Paulson.
Who markets the credits?	Credits are not specifically marketed given the awareness in the developer community of the existence of the bank with its recognition by USFWS.
Who owns the land?	Williamson County.
What types of management activities take place?	Current management activities involve restricting access to the caves once they are identified and purchased, combined with incorporation of buffer areas intended to maintain the hydrology that is essential to the caves providing suitable habitat to the listed species.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	Purchased lands are owned by the county and incorporated into its planning with regard to open space.
What is planned lifespan of bank?	Unclear. However, goal is to establish 6-7 karst-faunal preserve areas. Active development and growth in the county will likely continue the demand for mitigation areas.

Williamson County Karst Conservation Foundation

Information categories	Responses
What types of monitoring take place to ensure bank “performance”?	Monitoring protocols for the caves are currently being developed and implemented at various levels of intensity to identify the types of data and level of effort that are needed to evaluate the quality of the habitat and to provide indications that additional actions may be required.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Not known.
Are there provisions for monitoring to trigger remedial actions?	The monitoring and management plans for the caves are not finalized. Given the relative lack of knowledge about the caves and their listed species, initial monitoring results will be used to help establish baseline conditions. Over time, monitoring results that indicate a decline in invertebrate populations may trigger remedial actions. Specific remedial action thresholds have not yet been defined.
Can monitoring reports be obtained?	Did not receive. Reports may be available from Sybil Vosler of the U.S. Fish and Wildlife Service.
<i>Subjective appraisals</i>	
Impetus to start bank	County advisors and staff recognized that significant future development in the county would require a coordinated plan for mitigating impacts to endangered karst cave species. Funding from a bond issue was used to purchase the initial set of 9 caves and associated lands which were intended for a county park. The immediate driver for creating the mitigation bank came when the USFWS needed to spend \$3.2 million that it had accepted for mitigation to impacts in karst caves resulting from the Texas Turnpike Authority’s construction of Texas Road 45. The \$3.2 million payment was intended to fund the purchase of a cave parcel from a private landholder but the deal collapsed when the landowner raised the effective price of the mitigation parcel from \$3.2 million to \$11 million because of frustration with USFWS. Instead, the USFWS paid Williamson County to preserve 220 acres of cave habitat in a regional park. This payment was the start of the revolving fund administered by the Williamson County Karst Conservation Foundation for the purchase of additional karst faunal areas in the county.
Issues at startup	Initial issues were significant skepticism within the county with regard to the development of a mitigation plan for “bugs” (i.e., cave invertebrates). Allocating funds from the bond issue to environmental projects also was seen as controversial. In general, county officials like conservation banking because the funding burden for endangered species management is placed on developers. In addition, private individuals who were facing restrictions on land-use because of the presence of caves on their land are able to earn money from protecting their land.

Williamson County Karst Conservation Foundation

Information categories	Responses
Difficulty in marketing credits	No. While credits have not formally existed, with impacts and mitigation being addressed on a case by case basis, there is active growth in the county so the need for mitigation is significant and anticipated to remain steady or grow in the near term.
Issues with current regulations	None to date.
Is bank a success?	Success in that it has enabled the preservation of a number of critical habitats that support the listed species. Ecological success is somewhat clouded by the overall uncertainty regarding the requirements of the listed species and concern over whether existing protective measures (e.g., setbacks incorporated into the purchase agreements) will prove adequate over time.
Do they know of any banks that were started and failed – If so, why?	No.
<i>Relevant permits</i>	
<i>Other notes</i>	This bank differs from other banks because credits and debits have not been clearly defined yet. The credit and debit issues for listed species that depend on karst cave habitats are clearly still being dealt with on a case by case basis in the county. Proposed impacts are evaluated against proposals from the Williamson County Karst Conservation Foundation to undertake future purchases of identified karst-faunal habitats. At the moment, this bank is essentially functioning like a fee-based mitigation system. The county is not concerned that land prices could outstrip fees collected by the Foundation because there is still an abundance of undeveloped areas in the county.

Wilson Creek/Joe A. Gonzalez

Information categories	Responses
<i>Background</i>	
Stratus Consulting interviewer	David Chapman, Diana Lane, David Mills
Interview date	10/3/2001 with Michael McCollum. Note that Michael McCollum provided the same information for the Wilson Creek and Wilson Valley Conservation Banks. The bank descriptions differ only in the owner, the size, and the number of credits available and sold.
<i>Bank name</i>	Wilson Creek/Joe A. Gonzalez
<i>Location</i>	
Address	
City	
State	CA
County/location	Riverside
<i>Contact for information</i>	
Name	Michael McCollum
Phone	916 688 2040
E-mail	mccollum@mccollum.com
Organization	McCollum Associates
Title/role	Helped develop the currently unsigned banking agreements for the respective bank owners and is active in the marketing of available credits.
<i>Additional contact, if any</i>	
Name	
Phone	
E-mail	
Organization	
Title/role	
<i>URLs with information</i>	
URL#1	http://www.mccollum.com/Mitbanks.htm
URL#2	http://www.rcip.org/mshcpdocs/vol1/4_6_1.pdf
<i>Size of bank</i>	
No. of acres in bank (note if parcel not contiguous)	1,850 acres.
No. of acres of buffer areas, if any	No formal buffer areas.
No. of credits in bank	1,850 credits.
No. of credits used or sold to date	688.3 credits used.
<i>Species/habitats/credits available</i>	
	C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians	
Birds	California gnatcatcher (FT)
Fish	
Invertebrates	Quino checkerspot butterfly (FE)

Wilson Creek/Joe A. Gonzalez

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 acre = 1 credit for high quality habitat.
What was the method used for defining and measuring credits?	The credits in both banks are for high quality habitat of the respective species for which credits are available (gnatcatcher and the Quino checkerspot butterfly).
How were multiple species issues addressed?	Credits can be used for either gnatcatcher or checkerspot butterfly impacts — the same credit cannot be sold twice for different species.
What is the service area for the bank?	Credits in the bank are available only for projects incurring losses in Riverside County.
Can we get the Conservation Banking Agreement?	We did not obtain the agreement.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be “traded off” for debits vs. credits?	No.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	
Who used credits?	Credits have been purchased exclusively by private parties.
Total number of transactions?	Not available.
Average size	Not available.
Average price or change in price over time	Credits initially sold for between \$5,000-\$7,000 and currently are typically selling for between \$10,000 and \$12,000.
<i>History/status of bank</i>	
Current status	Active, but in final phase of operation following the approval of a multiple species habitat conservation plan (MSHCP) in Riverside County. Under this plan, Riverside County will adopt a fee-based system for species mitigation. The county will collect fees directly from those proposing incidental takes and will use the funds to purchase lands in accordance with the goals of the county’s habitat conservation plan.
Who owns bank?	Private individual (Joseph A. Gonzalez).

Wilson Creek/Joe A. Gonzalez

Information categories	Responses
Has ownership changed – If so, why?	No.
Who can use the bank?	Open to any individual/organization that USFWS will approve. History of credit purchases to date is that credits have been purchased by private parties (i.e., not public institutions).
Establishment date	1997/98.
Date first credit used	Not available.
<i>Management and operation</i>	
Who manages the habitat?	Bank lands are managed by the owners.
Who markets the credits?	McCollum Associates
Who owns the land?	The bank is privately owned by Joseph Gonzalez.
What types of management activities take place?	Bank credits are based on the preservation of existing habitat and are not conditional upon improvements from restoration actions.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	Specified in conservation agreement which we did not obtain.
What is planned lifespan of bank?	Banks have a short term time horizon for sale of existing credits and are not going to expand given move on the part of Riverside County to adopt a fee-based mitigation system.
What types of monitoring take place to ensure bank “performance”?	Information not available.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Information not available.
Are there provisions for monitoring to trigger remedial actions?	Information not available
Can monitoring reports be obtained?	Information not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Banks were developed for investment purposes following the successful creation of other conservation/mitigation banks in Southern California (e.g., Wheeler and Carlsbad banks).

Wilson Creek/Joe A. Gonzalez

Information categories	Responses
Issues at startup	Process for establishing the banking agreements took longer than anticipated based on experience of Michael McCollum in establishing other similar agreements.
Difficulty in marketing credits	Credit marketing has been complicated by either the refusal or the reluctance of the USFWS to formally sign the banking agreements. The pool of potential credit purchasers is limited to those who are directed to the banks by the USFWS staff (which does not always occur), or who are already aware of the banks and receive approval from USFWS to use credits from the bank for mitigation.
Issues with current regulations	Current move to a fee-based system for species mitigation in Riverside County has effectively ended the opportunities for the development of additional private mitigation banks in the county. The County has agreed that existing banks will have the opportunity to sell remaining credits.
Is bank a success?	The bank can be viewed as ecologically successful in terms of preserving significant acreage of high quality habitat for the Quino checkerspot butterfly and California gnatcatcher. However, from an ecological assessment, the banks could potentially have had a much larger positive impact for the species had the banking agreements been signed. If more transactions had occurred, the banks would likely have purchased additional land and expanded. Economically, the failure to sign the banking agreements and the move in Riverside County to a fee-based system of species mitigation have introduced delays and constraints that have minimized the potential returns to the bank owners.
Do they know of any banks that were started and failed – If so, why?	Michael McCollum noted that there is effectively no future for private conservation/mitigation banks in Riverside County because of the implementation of the fee-based species mitigation program. He also noted that a general agency commitment to conservation banking is a necessary but not sufficient condition to ensure their development and success. Local USFWS agency staff have significant control in determining local mitigation options and can severely constrain the conditions in which any approved bank can effectively provide mitigation credits.
<i>Relevant permits</i>	
<i>Other notes</i>	Michael McCollum observed that the history of the development banks in So. California can be characterized by significant initial cooperation on the part of interested parties (e.g., landowners, developers, regulators) to establish model banks followed by increasing skepticism by regulators regarding their benefits and reluctance to use them. This reluctance is demonstrated through refusing to sign agreements or through incorporating operational constraints that limit their effective viability.

Wilson Valley/Won Yoo

Information categories		Responses
<i>Background</i>		
Stratus Consulting interviewer		David Chapman, Diana Lane, David Mills
Interview date		10/3/2001 with Michael McCollum. Note that Michael McCollum provided the same information for the Wilson Creek and Wilson Valley Conservation Banks. The bank descriptions differ only in the owner, the size, and the number of credits available and sold.
<i>Bank name</i>		Wilson Valley/Won Yoo
<i>Location</i>		
Address		
City		
State		CA
County/location		Riverside
<i>Contact for information</i>		
Name		Michael McCollum
Phone		916 688 2040
E-mail		mccollum@mccollum.com
Organization		McCollum Associates
Title/role		Helped develop the currently unsigned banking agreements for the respective bank owners and is active in the marketing of available credits.
<i>Additional contact, if any</i>		
Name		
Phone		
E-mail		
Organization		
Title/role		
<i>URLs with information</i>		
URL#1		http://www.mccollum.com/Mitbanks.htm
URL#2		http://www.rcip.org/mshcpdocs/vol1/4_6_1.pdf
<i>Size of bank</i>		
No. of acres in bank (note if parcel not contiguous)		1280 acres.
No. of acres of buffer areas, if any		No formal buffer area.
No. of credits in bank		1,280 credits.
No. of credits used or sold to date		991.95 credits used.
<i>Species/habitats/credits available</i>		C = California threatened species; FE = federally endangered; FT = federally threatened
Amphibians		
Birds		California gnatcatcher (FT)
Fish		
Invertebrates		Quino checkerspot butterfly (FE)

Wilson Valley/Won Yoo

Information categories	Responses
Mammals	
Plants	
Reptiles	
Habitat types	
<i>Credit definition for bank</i>	
Unit for credits (acres or organisms?)	1 acre = 1 credit for high quality habitat.
What was the method used for defining and measuring credits?	The credits in both banks are for high quality habitat of the respective species for which credits are available (gnatcatcher and the Quino checkerspot butterfly).
How were multiple species issues addressed?	Credits can be used for either gnatcatcher or checkerspot butterfly impacts — the same credit cannot be sold twice for different species.
What is the service area for the bank?	Credits in the bank are available only for projects incurring losses in Riverside County.
Can we get the Conservation Banking Agreement?	We did not obtain the agreement.
<i>Measurement methods for “debit areas”</i>	
How is “debit area” assessed?	Debit assessments that could use credits from this bank are made with USFWS staff.
Can different species be “traded off” for debits vs. credits?	No.
<i>Credit transaction history</i>	Not available.
<i>If individual transaction data not available</i>	
Who used credits?	Credits have been purchased exclusively by private parties.
Total number of transactions?	Not available.
Average size	Not available.
Average price or change in price over time	Credits initially sold for between \$5,000 and \$7,000 and currently are typically selling for between \$10,000 and \$12,000.
<i>History/status of bank</i>	
Current status	Active, but in final phase of operation following the approval of a multiple species habitat conservation plan (MSHCP) in Riverside County. Under this plan, Riverside County will adopt a fee-based system for species mitigation. The county will collect fees directly from those proposing incidental takes and will use the funds to purchase lands in accordance with the goals of the county’s habitat conservation plan.
Who owns bank?	Private individual (Won Yoo).
Has ownership	No.

Wilson Valley/Won Yoo

Information categories	Responses
changed – If so, why?	
Who can use the bank?	Open to any individual/organization that USFWS will approve. History of credit purchases to date is that credits have been purchased by private parties (i.e., not public institutions).
Establishment date	1997/1998.
Date first credit used	Not available.
<i>Management and operation</i>	
Who manages the habitat?	Bank lands are managed by the owners.
Who markets the credits?	McCollum Associates
Who owns the land?	The bank is privately owned by Won Yoo.
What types of management activities take place?	Bank credits are based on the preservation of existing habitat and are not conditional upon improvements from restoration actions.
Did active management for restoration need to take place to gain credits?	No.
What are long-term management arrangements?	Specified in conservation agreement which we did not obtain.
What is planned lifespan of bank?	Banks have a short term time horizon for sale of existing credits and are not going to expand given move on the part of Riverside County to adopt a fee-based mitigation system.
What types of monitoring take place to ensure bank “performance”?	Information not available.
<i>Performance monitoring</i>	
How frequently does monitoring occur?	Information not available.
Are there provisions for monitoring to trigger remedial actions?	Information not available
Can monitoring reports be obtained?	Information not available.
<i>Subjective appraisals</i>	
Impetus to start bank	Banks were developed for investment purposes following the successful creation of other conservation/mitigation banks in Southern California (e.g., Wheeler and Carlsbad banks).

Wilson Valley/Won Yoo

Information categories	Responses
Issues at startup	Process for establishing the banking agreements took longer than anticipated based on experience of Michael McCollum in establishing other similar agreements.
Difficulty in marketing credits	Credit marketing has been complicated by either the refusal or the reluctance of the USFWS to formally sign the banking agreements. The pool of potential credit purchasers is limited to those who are directed to the banks by the USFWS staff (which does not always occur), or who are already aware of the banks and receive approval from USFWS to use credits from the bank for mitigation.
Issues with current regulations	Current move to a fee-based system for species mitigation in Riverside County has effectively ended the opportunities for the development of additional private mitigation banks in the county. The County has agreed that existing banks will have the opportunity to sell remaining credits.
Is bank a success?	The bank can be viewed as ecologically successful in terms of preserving significant acreage of high quality habitat for the Quino checkerspot butterfly and California gnatcatcher. However, from an ecological assessment, the banks could potentially have had a much larger positive impact for the species had the banking agreements been signed. If more transactions had occurred, the banks would likely have purchased additional land and expanded. Economically, the failure to sign the banking agreements and the move in Riverside County to a fee-based system of species mitigation have introduced delays and constraints that have minimized the potential returns to the bank owners.
Do they know of any banks that were started and failed – If so, why?	Michael McCollum noted that there is effectively no future for private conservation/mitigation banks in Riverside County because of the implementation of the fee-based species mitigation program. He also noted that a general agency commitment to conservation banking is a necessary but not sufficient condition to ensure their development and success. Local USFWS agency staff have significant control in determining local mitigation options and can severely constrain the conditions in which any approved bank can effectively provide mitigation credits.
<i>Relevant permits</i>	
<i>Review notes</i>	Michael McCollum observed that the history of the development banks in Southern California can be characterized by significant initial cooperation on the part of interested parties (e.g., landowners, developers, regulators) to establish model banks followed by increasing skepticism by regulators regarding their benefits and reluctance to use them. This reluctance is demonstrated through a refusal to sign agreements or through incorporating operational constraints that limit their effective viability.

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